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ORIGINAL ARTICLES.

"QUO VADIS?"

Presidential Address delivered before the Tri-State (Alabama, Mississippi and Tennessee) Medical Society, at Memphis, Tenn., Dec. 21, 1898.

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TRENTON, TENN.

An article presented as a presidential address usually opens up a wide field for a congratulatory review of the progress of medicine in the few years immediately preceding the date at which it is read, and for painting pictures of a roseate hue of the future possibilities of surgery and gynecology. Any departure from this routine custom may be frowned upon and denounced as "not regular," but men are generally profited more by the mistakes of themselves and their friends than by their successes. A mistake made impresses an honest student of medicine and surgery—as it does workers in all other branches of life—to the extent that the same error is not likely to be committed again. The lesson has been too deeply impressed to be readily forgotten.

An optimist is as dangerous in medicine as a pessimist, if not more so. The optimist, always looking for the good, sees nothing of the bad of his work. The latter is a bad dream, the sooner forgotten the better. His views lead ultimately to experimentations, even to the extent of the sacrifice of human life by the use of new and untried remedies, when old ones are known to accomplish all that can be desired, or rather all that could be reasonably expected.

The pessimist, expecting little, may lose a life from the non-employment of a remedy that might relieve, but does not destroy by the reckless use of those remedies which do not rest on a firm foundation. I trust that thoughts presented on this occasion may occupy a middle ground, rather than bear to either extreme. In an article or two, read on different occasions at medical meetings, it has been my fortune, good or bad, to call down upon my head the opposition of specialists as a whole, but the approval, as a rule, of the general practitioner. Such was not intentional on my part. Nothing that I then wrote was presented in malice toward any, nor intended as a sarcastic review of the tendency of the present day toward specialism in medicine or surgery, but because I felt that the pendulum had swung in one direction too far, and needed something to prevent the recoil from being too great, with a consequent loss of much of the vantage ground that had been gained in the past ten or fifteen years.

The proclamation of the discovery of tuberculin by Koch, and the eager grasping of the long-sought remedy for the cure of consumption, both by the profession and the laity, proved to be almost an "apple of Sodom." For a short time it brought discredit on many researches in the direction of serum therapy; nor have we yet fully recovered from the shock of the failure of tuberculin to do what its most ardent and hopeful supporters claimed for it. To some extent, the treatment of diphtheria with the antitoxin prepared in the laboratories, both of this country and Europe, has been discounted by the collapse of the hopes entertained by the enthusiasts in the use of tuberculin. A still heavier impediment has been thrown in the way of theoretic (?) medicine by the issuing of letters patent in this country for the serum manufactured in Germany, when neither there or in France could letters patent be secured. Hence, I take the position that it is well at times to call a halt in both medicine and surgery, and take our bearing to ascertain "where we are at," and to ask ourselves, "whither are you going?"

In the olden times, in the practice of medicine, every man was a specialist in everything, from the treatment of worms in babies to what was considered in those days capital operations in surgery. A strong foundation was laid in the then sciences of anatomy and physiology, upon which their superstructures were erected. In *these* days the foundation must be more broadly laid by the study in addition of pathology and all its kindred environments, in order to understand scientific medicine and surgery of today. The microscope, in connection with the culture and study of the so-called disease-producing germs, is made to do the greater part of the diagnostic work that was done by a careful study of the patient and his diseased state at the bedside. The clinical history of cases, upon which so much stress was formerly laid, is being pushed to one side, and we are today taught that no diagnosis can be depended upon that is not confirmed by the specialist in his laboratory. I make the statement as broad as above, because the general practitioner can not be expected to attain to the same skill in the use of the microscope and the various culture-media as the laboratory student or teacher, whose days are spent with his retorts, test-tubes, test solutions, microscopes and X-ray machines, and his diagnoses would be accepted *cum grano salis*, unless he is able to present a report of an expert (?) in each case, confirming the position assumed by him. I, therefore, ask the question "*Quo vadis?*" in this direction? Is clinical medicine to be ignored? Is the student to be taught that there is no need of the bedside study of his case? I say emphatically, "No." When that is to be done, then the general practitioner must disappear from the scene of action in the medical world or become a mere tool in the hands of some microscopist. I do not hesitate to take the position that Louis, Wood, Flint and others were just as able to diagnosticate diseases in their day and time; that they could be just as positive in regard to the exist-

ence of typhoid fever without the outside helps of today, as we are with all the microscopes and culture-media of the present, in the hands of the most expert users of them. Too often the microscope is made to conform in its teachings to the trend of its user. In doubtful cases, as was remarked by a friend of mine, probably now present in this meeting, the decision of a case as to the existence or non-existence of certain sought-for points depended upon the fee paid and the side on which it was paid. He did not lay this down as a *rule*, but said it occasionally resulted as stated. I would not be considered as reflecting even indirectly upon our laboratory workers. They have done, and are yet doing, much good by their investigations in the domains of medicine and surgery, but it is true, as was remarked by J. Lewis Smith some years ago —before the microscope was used as much as it is now—that we can not be positive about the presence of pathologic germs which were found on the "border-land of the visible." The microscope, the X-ray machine and all other mechanic appliances should be made use of in the examination and diagnosis of cases, medical and surgical, but when they are expected to supply the want of brain in the physician or surgeon, they will prove themselves delusions and snares. The diagnostic ability must be still developed to the highest point, and those mechanic aids should be called in only when in doubt. The fact that the microscope fails to discover the presence of tubercle bacilli in the sputum is no proof that a person's lungs are not diseased. A case, which I was treating and continued to treat till death claimed its victim, was a clear illustration and proof of this fact. Two examinations of the patient's sputum were made, but neither revealed the presence of the bacillus of tuberculosis, and yet the patient filled a consumptive's grave. An able bacteriologist of this State wrote that the results of his examinations were *negative*. Every disease germ has been found by the microscopist to exist in the secretions of healthy individuals. The Klebs-Loeffler bacillus, the so-called cause of diphtheria, has been found on the fauces of hundreds of school children in Paris, who were in apparent health. And yet we are told that without the aid of the microscope no positive diagnosis of diphtheria can be made. The carefully studied clinical history of any case will enable the competent physician to make the diagnosis of cases coming under his care, which diagnosis may, and should, then be confirmed by the use of the microscope.

The skiagraph is a most excellent adjunct in surgery, but many a life might be lost while waiting for an expert to bring his machine. The teaching of medicine today, then, is, in my opinion, faulty, to the extent that it is laboring to render the general practitioner of medicine and surgery reliant on machines, not on self. The question then, "*Quo vadis?*" is very applicable in this field of teaching. The country practitioner, whose work has done more for the advancement of medicine and surgery than that of his city confrère—that body of the profession, which has furnished a McDowell, a Sims, a Bozeman and a host of others who have risen to eminence in the profession of medicine and surgery—should not be discouraged by being told that they could not diagnose with any degree of certainty the diseases of everyday life, because they can not use the microscope or the Roentgen-ray machine. Their work has stood the test of time, and will continue to bear fruit as long as time shall last. The descriptions of typhoid fever cases furnished by Louis and Wood can not be improved upon by any modern writer, though he may set forth in his report the fact of the presence of the bacillus typhosis, the bacillus of Eberth—a fact utterly unknown to them—and may even still further prove the existence of typhoid fever by Widal's serum test.

All honor to our microscopists and their confrères, who have made clear many doubtful cases; who have been able to ascertain with the wonderful light of this day the presence of foreign bodies, which could not in other ways be located. They deserve honor, glory and shekels for their work—a work which has cost many useful lives in the profession, and where, in Vienna, we have just had strong proof, in the loss of so many valuable lives in the study and culture of the *materies morbi* of the bubonic plague, that those who embark in such work verily take their lives in their own hands. These new sacrifices upon the altar of medical science should place the profession still higher in the estimation of the world.

Again, "*Quo vadis?*" will apply to the headlong rush into specialism by the sons of specialists and by those who are in no wise related to specialists. Many of the young men of the present day who enter medical schools, attend lectures, not for the purpose of becoming physicians in the broad sense of the term, but for the purpose of preparing to practice some special branch of the healing art. To the attainment of a desired (?) proficiency in their chosen branch or branches, they sacrifice all of the other departments of medicine. If they *barely* pass in all the subjects except their chosen field of labor, they are content, and return home and begin their life's labor with the distinct understanding that they devote special attention to the eye, ear, nose, throat, and genito-urinary organs, etc. It is understood that they are general practitioners for the time being, but as they become able to do so, will devote their time and attention more and more to their specialty, till finally they expect to do no other work. In the olden times such was not the case. Every one went out from college as a general practitioner of medicine and surgery. He devoted his time and attention to this general work—building well on the foundation that he had laid—until he was firmly established in the general and special principles of medicine and surgery. He then began to study himself and his work, finding out in what special direction his talent, if he had any, lay, and from this beginning developed the well-made specialist—a true specialist, because he was thoroughly posted upon the general diseases and conditions, including their treatment, from which the special disease sprung, hence was better adapted to treat and remove the cause of the disease than his brother specialist of today, who believes he was to the "manor born," or who has been graduated from a medical school of the present day a full-fledged specialist in the strictest sense of the term. The specialist who is evolved under the rule of the survival of the fittest, is, in my opinion, more than able to cope with the one who is born new from a medical school. Do not understand me to mean that I would not expect the one evolved to proceed with his work without special study and preparation. When the general practitioner discovers his adaptedness for some particular line of work, then he should return to the medical school and devote his time and attention to

that line of work. In this way he can become a success in his line.

Again, specialism, I regret to say, is making an effort in some places to break down the Code of Ethics, upon the ground that as they are not general practitioners, they have a right to consult with any one, whether homeopath, eclectic, Indian doctor or "hoo-doo," who may call them, as there is a common ground in their work upon which all may stand. They hold that homeopathy and eclecticism do not apply in the eye, the ear, the nose, and such like *special* fields of labor. As to the truth of this stricture I refer you to the two factions in the State of New York: the one side upholding the Code of Ethics, the other claiming the right to make a new code to suit their own convenience, the leading spirits in this class being mostly those practitioners who are engaged in special work. Another departure from the Code of Ethics along the lines of special work, was referred to by Dr. T. K. Powell, in a paper read at Jackson, Tenn., at the West Tennessee Medical and Surgical Association, viz., the right to contract prices for work in special lines, regardless of services rendered—a thing condemned in the strongest terms when done by the general practitioner. This must not be understood to mean that the specialist should not have, for himself at least, a fee bill, charging a certain price for an operation, for an ovariotomy, a hysterectomy, a cataract operation, or the enucleation of an eye; but that he should not be allowed to say to his patient, "I will cure(?) you, or treat your case for so many dollars, regardless of time or any other contingencies." This procedure smacks too much of quackery, yet it is done by some who stand high in the profession. If the same thing were done by the general practitioner in the beginning of a case of typhoid fever, he would be expelled from the ranks of regular ethical medicine.

Nor do I mean to say that all cases should be charged alike for the same service rendered. There are patients and times when a charge of $5 in a given case would be more than $50 or even $500 to another patient under other surroundings. Specialists, as well as the general practitioner, must have, and if *true* men, will have, their charity patients, who must not only be treated free, but must be cared for, fed and clothed, whilst being treated. This often falls to the lot of the God-fearing, Christian physician, and specialist also, in all parts of the civilized world.

Again, "*Quo vadis?*" needs an answer in connection with the manufacture and use of so many proprietary medicines of the present day. One manufacturer places upon the market his special preparation of cascara sagrada, backing it with endorsements of well-known medical men, and in a few weeks another manufacturer follows with a similar preparation which he is ready and willing to prove to be better than any other yet placed on the market, and he supports his assertion by a little longer list of names of physicians who testify to the merits of this specific make—each one of the physicians in both cases having been supplied with as many sample bottles as he thought he could use.

We find all kinds of digestive preparations, by different manufacturing establishments, each differing from the other chemically almost not at all, yet the array of names of reputable physicians certifying to the fact that each one is the best is almost legion. The preparations of pepsin, bismuth and strychnia, of lactopeptin, wine of pepsin, pepsin cordial, etc., could scarcely be enumerated, each of them possessing virtues, but advertised in many cases about as boldly as many of our patent medicines. The myriad of preparations from the phenol group may be cited as another instance of the craze for something new. Each one can be proven by the endorsement of reputable medical men to be the best. Each one has some peculiar property not possessed by its confrère. One will reduce the temperature without depression; another without any excess of diaphoresis; yet another is guaranteed to stimulate whilst the temperature falls; and another especially relieves the pains due to la grippe, etc. The manufacturers would not place these preparations upon the market, and could not afford to spend the hundreds of thousands of dollars used annually in supplying the profession with free samples, if there was not a demand for them. The medical world is groping in the dark for a specific remedy for each and every ill that the human flesh is heir to; hence the manufacture. The researches of Koch, Behring, and others in the line of serum therapy have aroused the commercial spirit in many lesser lights.

Dr. Leartus Conner, in a paper read before the American Academy of Medicine, in Denver, June 4, 1898, speaks of the diseases of the medical profession, and sums up an answer to the next "*Quo Vadis?*" as follows: "Among the diseases of the medical profession now definitely recognized and fully described, are: overcrowding; a vast number of incompetents; large numbers of moral degenerates; crowds of pure tradesmen; blatant demagogues; hospitals organized and conducted to the damage of both profession, patient and people; dispensaries and public clinics of the same character; medical colleges organized for the advantage of the few at the expense of the many, and unmindful of advantage to students; medical societies so conducted as to be a by-word among honest persons, and yet continued to advance the financial profit of their leaders; domination by commercial interests of drug manufacturers and proprietors of scent and proprietary medicines; the prey of money-making corporations, as railways, accident insurance companies and sanitariums; the tool of lodges, secret, and other social societies, etc."

This indictment is strongly drawn, yet who can deny that there is something of truth in every count laid down in it? The profession is overcrowded, and is becoming more and more so every year, in spite of the increased cost of a medical education and in spite of the rules and regulations prescribed as minimum educational requirements for entrance upon a course of study in a medical college. Although an effort is being made to protect the public through various laws passed in the different States to regulate the practice of medicine, in some cases requiring diplomas from colleges, accepted as in good standing by the board constituted under these laws; and in others, by demanding an examination by a body entirely divorced from all college connections and sympathies, still there remains a "horde of incompetents"—incompetent not so much from a want of book learning, as from a want of personal adaptedness to their chosen profession. That there is in the profession a large number of moral degenerates the records of the war just closed prove too conclusively. What appears to be the disgrace of the generation—the blot upon the medical escutcheon—has been the conduct and man-

agement of the medical department of the army raised for the invasion of Cuba and Puerto Rico. If *half only* be true that has been published, the medical service rendered has been a disgrace to the civilized world. Nothing that occurred during our Civil War, when the South was deficient in everything, could be compared with the failures made and reported thus far in the conduct of the hospital service of this campaign. In too many cases, the assignments of surgeons and assistants to the different regiments were made without regard to the ability of the applicant, but were decided by the "political pull" brought to bear on the governor of the State. This has been no worse, if as bad, in Tennessee, than in some of the other States. Gutter-snipes, wine-bibbers, and political dead-beats have had the call on men of ability in cases where the politician's Italian hand could be called into play. It, however, does no good to pursue this branch of my subject.

The moral degenerate is seen in the profession by the increasing numbers of alcoholics, and morphin-habitués in the ranks of the profession. Men who are recognized as reputable practitioners of medicine are found totally unfitted to minister to the sick and suffering because their perceptions are blunted by the long-continued use of alcohol, morphin or cocain. These men should be barred by special statutes from continuing to practice any branch of medicine or surgery. The professional abortionist is not now, as formerly, shunned as a moral leper. The only thing needed in his case is to maintain a semblance at least of respectability as a compliance with what a friend of mine has termed the "eleventh commandment"—"Do not get caught."

This is not as it should be, yet we see in our daily papers advertisements of Dr. A. or B. who will "treat confidentially all ladies who are in trouble." The profession and the laity know that this is an "ad." of the professional abortionist, yet day by day it is seen and read by all men. *"Quo Vadis?"*

The spirit of commercialism has been for some years gaining a strong hold upon our profession. The multiplications of public and private hospitals, under whatever name they are called, whether sanitariums, retreats, or what not, together with the dispensaries and public clinics, and the erection of medical colleges—so-called—in different cross-roads towns, and the *unnecessary* increase of the numbers of those in cities where one or more already were established, is the result of this spirit of commercialism, a greed for gain, or worse still, of the desire to advertise oneself to the world as a professor, for the purpose of catching the innocent and unsuspecting. Alas, too, our medical societies are not always kept free from the blight of the unscrupulous advertiser. A glance at the programs of the meetings of many medical societies and a comparison of the papers proposed to be furnished for the meeting, and those actually read and discussed, and those put in the hands of the secretaries with a reasonable excuse for the absence of the writer, will present a marked contrast. Many whose names appear as such never expected or intended to present any paper, but it was a cheap way to advertise oneself, if a copy of the program could be put in the hands of his local editor, who would no doubt note the fact that Dr. C. was to present a paper on———at the approaching meeting of the Dogtown Medical Society.

This side of the picture has been presented to your gaze, not that there is no reverse—thank God, there is!—but that we may profit by our mistakes.

Let us glance for a few minutes only at the other side of the picture. Specialism is needed to the development of medical science. Without it the wonderful strides that have been made in the study of etiology and pathology in the decade now almost closed could not and would not have been made.

Without the microscope and the X-ray machine progress would still further have been delayed; without these mechanic helps, and without skilled specialists to use them we could not stand where we now do. Under the stimulus of specialism the practice of medicine is rapidly passing from the domain of empiricism, and being reduced to the basis of a science. A reason for the administration and use of any remedy proposed is now demanded. All this is not to be attained in a day. The work of years is yet before us. Many of the so-called specialties will be relegated to the general practitioner, as has been the ordinary work of the obstetrician. For years, the attention given the parturient women demanded a specialist. Now all has changed, and the general practitioner claims the lying-in chamber as much his work as the sick-room of a typhoid patient. Again, the oculist furnishes learned papers at our medical meetings, upon questions in ophthalmology, that belong to the general practitioner; thus recognizing the fact that there, too, the practitioner of medicine is expected to post himself. He is required to be well-informed on minor and general surgery. So that year by year the work of the general practitioner is being enlarged. The demand for his services by life insurance companies is forcing him to prepare himself and his office for examination of the heart, lungs and kidneys; so that special fields are again encroached upon along these lines.

The need of the railroads for medical and surgical aid along their lines at points outside the recognized medical centers, compels the general practitioner to equip himself mentally and otherwise for the ordinary, and in some cases extraordinary, surgical operations. As health officers for States, counties and municipalities, his services are daily more and more in demand, so that whilst the ranks of the medical profession in its general and special branches are being crowded, yet new outlets are being made for this excess, and new fields in which they can be employed open up on all sides. We can not hope to eradicate from the profession the spirit of commercialism; yet its baleful influences can be lessened by a closer adherence to our Code of Ethics.

In the days of the Master the fields were found to have tares growing with the wheat, and the same thing has continued up to the present time, nearly two thousand years. The same advice given in regard to them in those days will apply in our time. We must bear with them; let them severely alone, lest we damage the wheat. The effort being made in a portion of our ranks to break down our Code of Ethics and set up a new code is a tacit agreement that the tares are of more value than the grain. The erring portion of the fraternity of New York City and the State should be left alone to work out their own salvation. Such efforts as were made in Denver to break down the dividing wall and carry the large body of the profession over to that faction can not be too strongly condemned. It seems to be a case of Mahomet and the mountain. If the mountain will

not come to Mahomet, then Mahomet will go to the mountain.

In concluding, I would ask the Tri-State Society to renew its allegiance to our Code, and press forward to the mark and prize of our high calling. The Society has just cause to be proud of the record that is being made by its members in scientific investigations, and whilst the large part of the glory belongs to those who are investigating and reporting upon the hitherto obscure causes of some of our most common maladies, yet we as a Society can shine in their reflected light. But I have occupied enough of your time, and hence, close, thanking you for having had the privilege and honor of serving you one year as your president.

LYMPHOSARCOMA OF THE MESENTERY.

(From the Laboratory of Pathology of the Chicago Policlinic.)

BY MAXIMILIAN HERZOG, M.D.

PROFESSOR OF PATHOLOGY IN THE CHICAGO POLICLINIC.

CHICAGO.

Sometime ago Dr. M. L. Harris[1] and myself reported a case of lymphosarcoma of the mesentery operated on successfully in a boy 5 years old. When I then collected the literature of the subject, I was able to tabulate a total of 57 cases of solid mesenteric tumors, of which about 10 were sarcomata. To the latter class I am able to add a new case. As in most instances of solid mesenteric tumors, the exact diagnosis as to location was not made *intra-vitam*. For a short abstract of the history of the case, I am indebted to Dr. R. B. Preble, under whose care the patient was during his last weeks of life. The history is as follows:

Sept. 14, 1898. H. G., German, 62 years old, physician. He traveled extensively as a young man, living for a time in Asia, where he escaped all diseases except a mild malaria; has lived many years in Chicago. About six years ago he discovered a moderate glycosuria, which disappeared on a course of Carlsbad treatment. The glycosuria never, to his knowledge, returned. He has been a moderate drinker all his life; never had syphilis. The present illness is of rather indefinite onset, both as to time and symptoms, but he must have been ailing for about two months. He has continued to do his medical work up to one week ago, and complains only of weakness, dyspnea, moderate constipation, and of the increasing size of the abdomen. A short time ago he had what he describes as an epididymitis[2] followed by swelling of the lymph glands below Poupart's ligament. It continued only a short time, and has now entirely disappeared. He has had no vomiting, no diarrhea, no jaundice, no hemorrhages.

Examination.—Well nourished and rather fat man, apparently about 60 years old; no jaundice, no cyanosis; moderate dyspnea, moderate edema of the feet. Lungs: lower borders high, but move freely on respiration; no râles, no fluid in pleural cavities. Heart: displaced upward by the high diaphragm, but normal in size. Tones pure and of normal intensity. Pulse: regular, strong, normal. Abdomen: prominent, contains large amount of free fluid, which changes promptly with change of position. No varicose veins. Liver: can not be palpitated, nor outlined by percussion. Spleen: palpable; Lymphatic glands: below Poupart's ligament both sides about the size of a hen's egg; elsewhere not palpable. Urine: contains no sugar, albumin nor casts. Blood examination, negative.

Diagnosis.—Atrophic cirrhosis of the liver, based on ascites, palpable spleen, absence of any other manifest cause for ascites and the history. The enlarged glands in the groins are not accounted for except as the probable result of an ulcer of the leg.

Treatment.—Diuretics, salines and mild diet.

The fluid in the abdomen gradually increased, causing dyspnea, until it was decided to tap the patient. Withdrew 6000 c.c. of milky fluid, s.g. 1012, large amount of albumin, sugar, 2 per cent. The fluid cleared on being shaken with ether; contained few round mononuclear cells with fat granules. The fluid was that of a chylous and not of an adipose ascites. After withdrawal of the fluid, large numbers of tumor masses could be felt throughout the abdomen. After the tapping, the patient rapidly lost strength, developed an edema of the dependent portions of the body, and on the last day a very slight icterus.

Clinical diagnosis.—Tumor abdominis, probably carcinoma, but there is no evidence pointing to the primary organ. Chylous ascites due to obstruction of thoracic duct by the tumor.

Fig. 1.—Section from tumor mass of the mesentery showing necrobiotic tissue and nuclear fragmentation, hyperchromatosis, karyolysis and free chromatin granules. Spencer prof. obj. ⅛; oc. 1½.

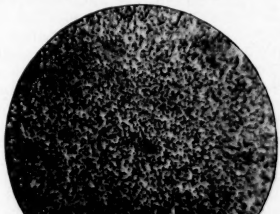

Fig. 2.—Section from tumor mass in inguinal glands showing small blood-vessels and young proliferating cells. Spencer prof. obj. ⅛; oc. 1½.

The postmortem was made by the author, Oct. 16, 1898—fifteen hours after death. The protocol of the autopsy reads as follows:

The body is that of a very strong, heavy man, about 60 years of age; estimated weight 250 to 260 pounds; well nourished. Postmortem rigidity and lividity well marked; extensive edema of the lower extremities, more marked on the right than on the left side; edema of the scrotum. The skin of the legs is hard and brownish in color. Between the umbilicus and the symphysis pubis, to the left of the linea alba, is a circular trochar wound, almost closed. On making the primary long incision the whole skin over thorax and abdomen is found to be edematous, a clear fluid oozing out from it.

The abdominal cavity contains from two to three gallons of a yellowish, very turbid ascitic fluid. The right pleural cavity contains quite a large amount of

[1] Harris and Herzog: Solid Tumors of the Mesentery, etc. Annals of Surgery, July, 1897.

[2] With reference to the trouble in the testicles, Dr. Karl Doepfner, who saw the patient during the latter part of August or the first of September, informs me that there was then noticeable in the head of the left epididymis, a firm, perhaps cystic, swelling, the size of a pigeon's egg. Whether this swelling was a tumor metastasis is rather difficult to say, since it apparently disappeared again. There was never any complaint on the part of the patient concerning his testicles during the time Dr. Preble saw him. Since I knew nothing about the symptoms referring to the testicle at the time I made the postmortem, and since a partial section only was permitted, the testicles were not removed or examined.

M. H.

clear fluid; the exact amount can not be estimated, since on manipulation ascitic fluid from the abdomen runs over into the pleural cavity and mixes with the clear pleuritic transudate. The pericardium is smooth and contains in its cavity a slightly increased amount of pericardial fluid. The external surface of the heart—which latter is of normal size—shows a moderate amount of fat; the myocardium is soft, flabby and pale; the orifices are normal in size; the endocardium is smooth over its whole extent; the valves are normal. The intima of the large vessels is smooth; the walls of the coronary arteries are somewhat stiff and thickened, their intima, however, is perfectly smooth.

Lungs: No adhesions on either side; quite an amount of clear fluid on the right side. The lower lobe of the right lung shows, on its anterior surface, several subpleuritic, flat, grayish-white patches, raised slightly above the surface; there were also found in the pulmonary parenchyma several firm, hard nodules, likewise of a grayish-white color. The entire lower lobe of the right lung, on section, appears more or less collapsed and solid; pieces from this part, however, still float on water. The lower lobe of the left lung also contains several hard nodules of the same type as those mentioned above. Both lungs are markedly edematous throughout. On the left pleura costalis, about the region of the fifth rib, in the axillary line, are found some small grayish-white, slightly prominent patches. The bronchial glands on either side are enlarged, firm and nodular, and on section, appear grayish-white and somewhat translucent. In the glands, from which small amounts of whitish material may be scraped, are numerous hemorrhagic spots. The omentum majus is studded throughout its whole extent with firm, grayish-white nodules from a few millimeters to one centimeter in diameter.

The spleen is large, smooth, quite firm and dark—brownish-red on section; the trabeculæ stand out distinctly and prominently. The kidneys are of normal size, capsules smooth, easily detachable; cortex and medulla normal in size and proportion; cortical markings fairly distinct. The mucous membrane of the pelvis is smooth. The adrenals, more or less embedded in tumor masses, show very marked pigmentation on section; their substance, however, is uniformly soft. The mesentery, the head of the pancreas, the retroperitoneal glands and the omentum minus form one large, irregular tumor, the component parts of which are united to each other more or less firmly by nodular masses. The mesentery and the retroperitoneal glands form a tumor mass as big as two large fists; the omentum minus is irregularly infiltrated with firm nodules; the head of the pancreas presents a roundish mass four or five centimeters in diameter. In the rest of the pancreas, the glandular tissue appears normal, with the exception of some small hemorrhagic foci. To the tumor, involving mesentery and head of the pancreas, part of the circumference of the duodenum is firmly attached. The lumen of this gut, however, does not show any marked constriction, and there is no impediment to the flow of the bile, which, on slight pressure upon the gall-bladder, escapes through the common duct. The stomach appears normal. On the under surface of the head of the gall-bladder there are three flat, grayish-white, somewhat prominent subperitoneal patches. The gall-bladder contains thickened, cloudy, dark-green viscid bile. Its mucous membrane is smooth.

The liver is small in size, nodular and uneven over its entire surface. The liver tissue is firm and uneven on section. Masses from the size of a pin-head to that of a millet seed rise above the level of the cut surface and make it uneven. Several small nodular, grayish-white, enlarged lymph-glands are found behind and around the thoracic aorta directly above the diaphragm. The lymphatic vessels can be followed downward behind the peritoneum, as several parallel white bands extending far down into the pelvis. The left inguinal glands are hard and firm, enlarged to the size of a large walnut, and on section, are found to be studded with grayish-white translucent nodules.

Anatomic diagnosis.—Malignant neoplasm of the mesentery and retroperitoneal glands; metastases in the head of the pancreas, the omentum minus and majus, the lymphatic glands on the neck of the gall-bladder, the pleura costalis and pulmonalis, the bronchial glands on either side the lymphatics along the thoracic and abdominal aorta, and the left inguinal glands. Compression atelectasis of the lower lobe of the right lung. Chronic passive congestion of the spleen. Cirrhosis of the liver. General anasarca.

Microscopic examination.—The tumor masses in the mesentery, in the omentum, in the head of the pancreas, in the inguinal glands, and in the lungs, are all of the same structure. They consist of small, round cells of the type of the ordinary small lymphoid cell. The nucleus is quite rich in finely glanular chromation, the cell protoplasm very scanty. Besides those cells there are found in other areas round cells, slightly larger than the former; they are more of the type of those cells found in the proliferating center of Flemming in the lymph follicle. Their nuclei are larger, and the chromatin is not as finely, but more coarsely granular; the cell protoplasm is not quite as scanty. The tumor cells are contained in a meshwork or matrix of fine connective tissue fusiform cells and fibers. These cells and fibers are not very abundant, still they are much better developed than they are in the normal lymph follicle. The blood-vessels in the tumor masses are moderately numerous and not very large. In places free blood is found between the tumor cells. Large areas of the neoplastic tissue show necrobiotic changes. All cells in such territories have lost their nuclei, and the cell body has become somewhat swollen and indistinct in outline; the degeneration has, however, nowhere progressed to the formation of hyalin or colloid material. This is noted expressly, since in the other case of lymphosarcoma of the mesentery reported by Dr. M. L. Harris and myself [3] there was very extensive colloid degeneration.

The above microscopic description refers more or less to all the tumor masses. However, it ought to be stated that the most marked and most extensive regressive changes are present in the large tumor mass, found in and developed from the mesentery. Here we see great tracts of necrobiotic tissue and also areas of fatty degeneration. The areolar tissue itself presents fatty changes; its meshwork is very poor in nuclei and shows a great deal of fine vacuolation. The necrobiotic areas, in a finely granular mass, show comparatively few nuclei with hyperchromatosis, nuclear fragmentation, karyolysis and free chromatin granules. The tumor mass most distant from the mesenteric tumor, namely, the one in the inguinal glands, on the other hand, shows very few regressive changes,

[3] loc. cit.

but presents clear and distinct cells and like nuclei, some with karyokinetic figures. Evidences of fat necrosis were not found.

The body of the pancreas is fairly normal, so far as the parenchymatous glandular tissue is concerned; the interstitial connective tissue, especially that around the small ducts, is increased in amount.

In the liver there is seen a proliferation of the intra-acinous periportal connective tissue; there is, however, no proliferation of the intra-acinous connective tissue. The proliferative processes are evidently active and progressive, since the intra-acinous tissue shows numerous newly formed blood-vessels and a proliferation of the bile-ducts. The tissue between the lobules also shows a very abundant infiltration, with small, round cells, all of the type of small lymphoid cells. Polymorphonuclear leucocytes were not found in the intra-acinous septa. The liver-cells proper are normal in size and arrangement. There is very little fatty degeneration in the lobules. Many of the intralobular bile capillaries, especially those near the periphery of the lobule, are much distended and filled with bile pigment. The liver-cells in the immediate neighborhood of such distended bile capillaries contain a considerable amount of granular bile pigment.

Epicrisis.—The mesentery, in which was found by far the largest tumor mass, was undoubtedly the primary seat of the lymphosarcoma, which subsequently gave rise to metastases in the pancreas, omentum, lungs, a number of lymphatic glands, etc.

The ascites, as such, was due to the cirrhosis of the liver. Its peculiar nature, i. e., that of a chylous ascites, must be explained by pressure on, and perhaps complete obstruction of, the thoracic duct, by lymph-glands enlarged and hardened by tumor metastases. The sugar found in the peritoneal fluid may be looked upon as a vicarious excretion of a pathologic metabolic product due to the extensive pancreatic involvement.

It is by no means obvious that the advanced cirrhosis of the liver in the present case was due entirely or even partly to alcohol. The deceased had certainly during the last six years of his life, i. e., after his transitory diabetic attack, been a very moderate drinker only, and he had never had any symptoms of cirrhosis except during the last weeks of his life. It does not appear entirely unreasonable to assume that the advanced cirrhosis of the liver, giving rise to definite symptoms only toward the later part of a comparatively short illness, may have been due to toxins derived from the large and widely spread sarcomatous masses in the abdominal cavity and brought to the liver by the portal circulation.

This possibility, I think, can not be viewed as an absurdity, but rather deserves some consideration, if we look upon it in the light of the contributions upon the subject of cirrhosis of the liver by Adami[1] and by Hektoen and Weaver, who quite recently reported to the Chicago Pathological Society observations on cirrhosis of the liver in the guinea-pig, due to bacterial infection and to the circulation of toxins in the liver.

[1] Adami: Montreal Med. Journal, September and December, 1898.

For Vulvar Pruritis.—Corrosive sublimate, 40 centigrams; alum, 8 grams; water, 1 liter; methylene blue, q. s. External application.—Guinard in *Progres Méd.*, January 7.

THE VARIABILITY OF DISEASE GERMS.

BY J. F. PEAVY, M.D.

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The theory of descent with modifications produced through the action of natural causes has been accepted by the best scientific minds of the age as expressing nature's method in the elaboration of organic forms. In no other way, perhaps, has this doctrine been of such signal service to science in general as through its influence upon the methods of studying and interpreting natural phenomena. Especially in the biologic sciences has this principle of development, of progressive modification, furnished the key for the solution of numerous problems. In the light of this principle, differences of kind are seen to arise through the accumulation of differences of degree, and, further, that these organic modifications arise through adaptation to the condition of life. The life of an organism is, in fact, a series of adjustments to varying conditions and forces which affect it.

Hitherto, our observations and generalizations have related chiefly to the higher organic forms. The unity of nature demands that we extend the general principles of biology to the lowly organized forms as well, among them the micro-organisms which are the specific causes of disease. The low forms are more distinctly the products of their immediate physical environment than the higher ones, and hence more directly affected by variations in it. The higher forms have more of accumulated property or momentum, of established biologic habit, which enables them to resist more effectively the influence of changes in physical environment.

The physical conditions with which the vital activities of micro-organisms are correlated relate especially to moisture, temperature and food-supply. Light, oxygen-supply, electric conditions and the presence of competing organisms exert important modifying influences in certain instances. Variations in physical environment tend to produce responsive variations in the activities of the organisms themselves, which relate especially to nutritive and reproductive activity.

On the question of morphologic variation, practical working bacteriologists are slow to admit the truth. Indeed, the attitude of many of them is a fine illustration of the strength of preconceived opinion. Wedded to the notion of the immutability of species in this department of biology, believing that each type is distinct and unvarying, they are blind to the real significance of facts which they will perhaps in a general way admit. The ordinary methods for the laboratory cultivation of bacteria are, in fact, not calculated to allow of variation. Everything is usually done by exact methods; the culture-media made by precise formulæ; incubation carried on at uniform temperatures; the environment, in fact, kept as unvarying as possible. With absolutely uniform environment, organic variation could never occur, except such as pertains to the life cycle of each individual. Under natural conditions no such uniformity exists, but variety is the rule, and thus arises the opportunity, indeed the necessity, for organic variation. Notwithstanding the unfavorable conditions, many bacteriologists are beginning to admit the principle of variability as applied to disease germs. Under the name of "biologic modifications," Sternberg not only admits the principle but lays considerable stress upon it.

The micrococcus lanceolatus, discovered by Sternberg in 1880 and subsequently described by Fränkel as the cause of acute fibrinous pneumonia, and hence called "pneumococcus" or "diplococcus pneumoniæ," certainly exhibits marked morphologic variations when developed under different conditions. The single cells vary much in size, and in form appear as cocci or rounded cells, short bacilli and intermediate or lancet-shaped forms. As to their mode of aggregation, they are seen as single cells, diplococci, tetrads, and chains of three or four or even as many as fifteen elements. Developed in living tissues, it is a capsulated organism, while artificially cultivated, it shows no capsule except in very virulent cultures. It also exhibits marked biologic adaptability, being now known to be the cause of numerous infectious processes not formerly considered to be etiologically related to each other. Indeed, the statement has been made that it stands in some intimate relation with all infectious inflammations of the body. Among the diseases which it is known to cause are acute fibrinous pneumonia, epidemic cerebrospinal meningitis, endocarditis, pericarditis, pleuritis, peritonitis, joint inflammations and general septicemia. The association of this organism with so many different diseases seems clearly to indicate that special conditions may select and propagate special modifications of the organism.

The diplococcus of pneumonia and the diplococcus intracellularis of Weichselbaum are now admitted to be generically the same, yet they show certain differences. These are differences bred into them by the special conditions under which each is developed. The diplococcus of pneumonia finds its most favorable conditions and attains its characteristic development in the cellular structure and fibrinous exudate of inflamed lung, while Weichselbaum's diplococcus finds its special field of activity and development in acute infectious inflammation of the meninges of the brain and spinal cord. None of the special differentiations of this organism associated with any of the infectious processes which it causes can be said to represent the normal tppe of the germ any more than the others. Probably the pneumococcus is the most common and best known modification, for the reason that lung tissue is more easily invaded than any other structure where it finds an inviting field of activity.

The fact that the nutritive and reproductive activities of disease germs depend upon the conditions under which they are propagated, and vary with them, is too well established to admit of question. To one at all familiar with the principles of biology it seems too axiomatic to need proof. It has been shown in many instances that the quantity and intensity, and even the nature of the chemic products of germ life, vary with their nutritive and reproductive activity. It is a necessary conclusion from these facts that variations of virulence, increase or attenuation, depend upon these modifications of biologic habit. Laboratory work has shown that not only the degree, but in many instances the type, of reaction to experimental inoculations is determined by these qualities bred into the germs by the conditions under which they are propagated. Pasteur's system of preventive inoculations is based upon the fact that the specific infective agents of certain diseases may be modified, and their incubation periods shortened, by breeding them under special conditions. Whatever opinion may be held as to the practical value of his inoculations, no doubt can be entertained as to the scientific soundness of the principles of his system.

The relation of cowpox to smallpox is an interesting question in this connection. The most reasonable theory seems to be that the relation is one of community of origin; that this disease, as well as analogous diseases occurring in other animals, has diverged from smallpox through adaptation to different condition of life. The fact that the germ of this disease is able to impress the human system in the same way, if not to the same degree, as smallpox, thus building up immunity against that disease, indicates that it has not departed radically from the primary stock. The opinion is held by many, apparently on good grounds, that vaccination does not protect as thoroughly now as in the earlier years of its use. This seems to mean that the specific infective agent of vaccinia continues to diverge from that of smallpox. Flint, in the earlier editions of his work on the "Practice of Medicine," states that if a cow be inoculated with the virus of smallpox, vaccinia is produced, and that the virus obtained in this way, transferred to man, produces vaccinia, concluding with Jenner that the two diseases are essentially identic. In a later edition of his work, while maintaining that the facts are sufficient to justify the statements and conclusion, he revokes them on the ground that the practical inferences are dangerous, that the virus obtained in this way fails in many instances to protect from smallpox, and in other instances causes that disease. The suggestion arises here that the virus produced in this way is like any newly produced variety of organism, simply unstable or indeterminate in its properties, with uncertain habits and strong reversionary tendencies. A further application of general biologic principles is that the continued cultivation of this virus for a sufficient number of generations in cows, that is, the maintenance of a practically uniform environment for a long enough time, would fix its properties or habits, producing a disease really identic with cowpox, and a virus actually the same as that now in use. Dr. Elgin, of the Hygienic Laboratory, U. S. Marine-Hospital Service, in a paper presented at the Denver meeting of the AMERICAN MEDICAL ASSOCIATION, speaking of a bacillus obtained from vaccin material and studied by him, uses this language: "This bacillus is polymorphous, taking different forms so frequently as to make it difficult to prevent contamination." He says further: "I am inclined to believe this is the organism reported by Martin, the contamination reported by Ernst being probably the changing forms of the organism." This author evidently means to say that under certain circumstances derivative forms may develop from this organism quite distinct in appearance from the parent stock. We note further that if this is the specific infective agent of vaccinia, as suspected by these observers, it has, like the pneumococcus, an inherent tendency to morphologic variation.

The Klebs-Loeffler bacillus is also known to be quite variable in form; normal bacilli, according to Ball, being found only in membrane. Whether this morphologic variability has any connection with the observed remarkable variability in malignancy of diphtheria is an interesting question for laboratory investigation. Certain it is that this disease presents remarkable variations in intensity in different epidemics, and, indeed, in different cases of the same epidemic. It is a very interesting and significant

fact that cultures from different cases differ greatly in virulence. I see no explanation for these facts except that the germs themselves vary in their nutritive and reproductive activities, that is, vary their physiologic habits, if not their form, in response to variations in nutritive environment and other conditions influencing their development. Indeed, it seems that under some circumstances, the virulence may be bred out of them altogether. Welch and Abbott discovered bacilli identic morphologically and in their behavior in culture-media to the bacilli of true diphtheria, yet which produced no toxalbumin and were harmless when inoculated.

In general, it may be said that pathogenic microorganisms propagated in the bodies of animals or persons of high susceptibility acquire increased virulence, while in animals or human beings of low susceptibility, they lose virulence; also, when propagated under specially favorable artificial conditions they gain in intensity, while under unfavorable conditions they become attenuated. Strong cultures of anthrax bacilli produce acid products, weak ones alkaline. This bacillus, which is typically sporogenic when cultivated in gelatin containing 1 to 1000 carbolic acid, develops a variety which can not produce spores. What are called "involution forms," differing from the ordinary type, also appear. Enough facts have been adduced to establish the validity of the general contention that disease germs, like the higher organisms, are subject to their conditions of life, that they vary with them sometimes morphologically, always in nutritive activity, chemic products and reproductive vigor.

One of the first results of the establishment of the germ theory of diseases was to displace in the medical mind the vague and unscientific notion of "humors" and "influences, by the more definite conception of a specific cause for each disease, in most cases a low form of life. It now appears that our desire for definiteness and precision has carried us too far in our notions of the causes of disease. In our pursuit of a germ, distinctly individualized and peculiar to each disease, we have in large measure not only disregarded the "personal factors," the individual peculiarities, as influencing the type of reaction to germ invasion, but overlooked the fact that the germ itself is, in most cases, a varying quantity. Although laboratory workers quite generally are biased by an opposite view, still laboratory facts are accumulating which support the opinion that these germs do not belong to unvarying types, but, like the diseases which they cause, vary more or less according to the conditions under which they are developed. It seems, indeed, quite probable that the polymorphic varieties may under special circumstances give rise to types differing radically from the recognized normal stock. Besides the sudden departure in type made possible by polymorphism, it seems a reasonable presumption that progressive modifications may occur, produced by progressively changing conditions, like those accompanying advancing season, progressive rise or decline of temperature, progressive increase or diminution of atmospheric humidity, etc. A well-conceived and well-executed series of laboratory tests based upon this suggestion would certainly prove an interesting experimental venture, and would doubtless yield positive results corroborating the mass of evidence furnished by clinical observations of the diseases themselves.

Any doctor will admit that he has observed seasonal and local variations in different epidemics of infectious diseases. Even such an ordinarily well-behaved disease as measles will at times exhibit remarkable eccentricities, varying its incubation period within very wide limits and its virulence from that of a trifling ailment to one of extreme malignancy. This disease is selected as an illustration, because it is the most orderly, the least eccentric of the exanthemata. The different diseases of this group were formerly held to be varieties of the same disease, and it is not certain but that our medical forefathers were nearer the truth on this point than we are. It has certainly not been proved that they are not caused by different modifications of the same organism. That protean disease, influenza, has for years been giving us lessons in the possibilities of variety in its manifestations. "The personal factor" as determining the manner of reaction to germ invasion does not explain the marvelous variety of types which this disease assumes. We must admit in the germ of this disease a peculiar capacity for adapting itself to conditions as it finds them, enabling it to take advantage of individual peculiarities. It has frequently been remarked that the grip finds the weak points of the organs with unfailing certainty. Constitutional peculiarities modify the organism as a culture-medium for germs, and "weak points" furnish special conditions and special breeding-grounds for them. The grip germ, on account of its ready adaptability, is enabled to take advantage of a great diversity of conditions out of reach of germs more fixed and rigid in their habits. A typic grip attack of even ordinary severity is full of suggestions of the possibilities of this disease. The nervous symptoms, irritability, prostration, headache and spinal pains point to cerebrospinal irritation, which ranges in different cases all the way from so-called functional disturbances to fully developed cerebrospinal meningitis. The soreness of the muscles and joints hints at the distinctively rheumatic conditions developed where the proper determining factors exist, giving us in certain cases and in certain localities the characteristics of a rheumatic fever. The catarrhal inflammations present in this disease, by their great variety produce several modifications of type. In epidemics occurring in the winter, the ordinary bronchial cases will predominate, many cases showing gastro-intestinal and other catarrhal irritations. In cases occurring in the spring and summer gastro-intestinal symptoms become much more prominent. In the spring, and particularly in children, cases are apt to develop the acute critical phenomena of cholera morbus, passing away perhaps without persistent inflammation. Later in the season, the typic case is less rapid in its onset, but the gastro-intestinal irritation is much more persistent, the tongue red, the stomach and bowels tympanitic, presenting, in fact, the characteristics of "continued fever," and many cases that are diagnosed as typhoid fever are in reality caused by an indigenous derivative of the grip germ, modified by and adapted to seasonal, local and climatic conditions. Many of these summer cases will become general catarrhal fever, some of them accompanied by marked nervous symptoms and simulating very closely typhoid fever.

Attention has already been called to the fact that the development of the germs of any disease in the bodies of persons or animals of high susceptibility increases their pathogenic power. It seems a fair inference from this fact, and one supported by a good

deal of positive evidence besides, that special susceptibility to disease of certain organs and structures may not only invite attack at those points and give type to the individual case, but furnish special conditions for breeding into the germs themselves special virulence or appetite for the same organs or structures in other victims. The products of disturbed metabolism and diminished cell-resistance at "weak points" furnish special nutritive conditions which develop specific characters, differentiating them perhaps from parent germs, and causing them, when introduced into other bodies, to select the same organs as their most appropriate breeding-grounds. Thus, grip germs developed in the respiratory tract, propagate best in the respiratory tract and tend to continue the bronchial type of the disease. Where chronic irritation of the bile-ducts and other structures of the liver exists, these germs are furnished an inviting field for special activity, not only giving special prominence to the hepatic symptoms of individual cases, but acquiring themselves a predilection for the same structures in new cases. From the marked prominence and constancy of these biliary catarrhs, the disease acquires sometimes the characteristics of an acute infectious jaundice.

Reference has already been made to the effect upon the morphologic development of the pneumococcus of varying the conditions of its propagation. The further suggestion arises that its manner of aggregation, that is, whether occurring as single cells, pairs, tetrads, or chains, is determined largely by the degree of localization or limitation of the infectious process. In general disseminated infections the single or coccus form will be found to prevail. We have all seen cases wearing the clinical aspects of pneumonic fever, presenting its toxic phenomena and occurring in such connection with cases of pneumonia as to make a common origin practically certain, yet without the localized pneumonitis. That such cases are caused by the diplococcus pneumoniæ, I would not hold, but that they are caused by a monococcus generically the same as the diplococcus, and which in a localized inflammation of the lung would develop the paired form, appears to be extremely probable. This organism appears as a diplococcus in such localized, yet not strictly limited, inflammations as pleuritis, peritonitis, endocarditis and meningitis. In definitely limited, "walled off" inflammations, which last long enough with other conditions favorable, it is superseded by derivative forms aggregated into chains and clusters. Under such circumstances, they become pyogenic. This transformation requires special conditions, among which low cell-resistance and limitation of the field of action are the principal factors.

The theory of secondary infection is usually invoked to explain pus formation in an inflammation produced in the beginning by non-pyogenic microbes. Doubtless pyogenic microbes may sometimes be introduced to the seat of a non-pyogenic inflammation, but it is difficult to see how this can occur where the inflamed area is circumscribed and has no external communication. It can always be said that the germs are pyogenic from the beginning. This theory of secondary infection, and the dodge alluded to where this can not apply, are very satisfying to one believing in the immutability of species in this department of biology, but what it satisfies is preconceived opinion and not facts. To one recognizing the principle of modification by the conditions of life as a universal law of biology, the theory of the progressive evolution of these pyogenic microbes from pre-existing, less aggregated forms appears the more reasonable, especially when the microbe considered tends inherently to vary in the direction to produce these aggregated forms. The truth is, there is no line of distinction between pyogenic and non-pyogenic microbes. The theory of secondary infection is considered no longer necessary to explain phlegmonous erysipelas, the attempt to maintain a distinction between the streptococcus erysipelatosus and a streptococcus pyogenes having been practically abandoned. Pus formation is so largely dependent upon the degree of cell-resistance that microbes that are not usually pyogenic become so in certain individuals, and under favorable local conditions. This is the real reason why erysipelas is simple in some cases and phlegmonous in others.

It has been stated by many observers that purulent infiltrations have been formed after the lapse of some time by the pneumococcus. Other observers admit the fact that pus is sometimes formed after infection or artificial inoculation with this diplococcus, but maintain that cultures from the pus never show a pure growth, that pus organisms are always present. The secondary infection theory is ever ready as an explanation of their presence, but in experimental work where antiseptic precautions have been observed, the weight of evidence is certainly in favor of their having been elaborated from the diplococci. This aggregation of cocci and diplococci into chains and clusters is a sort of rudimentary social organization, a union for purposes of offense and defense. Another organism more advanced in the biologic and social scale has formulated the same principle in the motto, "United we stand, divided we fall." This step in organization takes place only where limiting conditions, a local abundance of food-supply and danger from common enemies furnish a basis for community of interest and action. In the intense local conflict which takes place between the micro-organisms and the leucocytes and tissue-cells in circumscribed inflammations, the pus microbes are built up by the necessities of the situation. They are at the same time the means and the product of successful conflict. By combining themselves into communities, the microbes are the better able to resist their enemies and compass their own survival. The natural conditions present—and we have here the operation of natural forces and natural law—select these more resistant aggregated forms for continued propagation, killing off the less resistant segregated individuals.

The conditions for suppuration may be as truly said to produce pus organism as that pus organisms produce suppuration. As is now well known, pus due to microbic action represents the slain in the conflict between the invading microbes and the defensive forces of the organism. Suppuration is nearly always a localized process, always so where pyogenic action is set up by microbes at first non-pyogenic. This is a necessary condition. Segregated and diffused, they are more easily overcome by the leucocytes and other defensive agencies of the system. The individuals can not unite to form communities and establish that intensity of local action necessary to pus formation. Where there is a general condition of low resistance, they may multiply with great rapidity as single cells or paired forms, and overcome the organism by a general septicemia, yet without local pus formation and

the production of these aggregated forms. In the course of general infections, where local inflammations develop, these aggregated forms make their appearance; nevertheless, they are the product of *localized* and *limited* action. Where nutrition is normal and the defensive forces at par, considerable quantities of well-recognized pus-formers from virulent cultures of streptococci may be introduced into the circulation, or into the peritoneal cavity where definite limitation is difficult, without causing either general infection or local suppuration. Here the organism, though failing to confine the germs to one locality by a wall of lymph, to destroy them by the usual method of siege, is yet able to segregate, diffuse and kill them off one by one. The staphylococci, whose communistic organization is more highly developed, are more difficult to disintegrate and diffuse. Their inoculation nearly always produces local suppuration.

This aggregation into pairs, chains and clusters once established, becomes a *habit* of the organism built into its organization, to be strengthened and maintained by favorable environment or weakened and lost through unfavorable conditions. It is, however, a real differentiation. There is, in fact, no intention to deny the reality of species and types among these lowly organisms. The real contention is that among them, as among the higher forms, there exist kinships based upon community of origin, the diversities of form and habit being produced by natural conditions. There is this difference, however, between the high and the low, which is insisted upon. The higher organisms have accumulated momentum of organization, carrying them forward in a determinate course and resisting influences tending to change their form and habits. They are modifiable, but comparatively long periods are required to produce appreciable changes. In these microscopic particles of scarcely differentiated protoplasm which we have been considering, whose cellular structure even is inferred rather than demonstrated, there is little of accumulated and organized biologic habit. They are to a great extent the product of their immediate physical environment. When changes not too radical occur in this environment, some varieties undergo adaptive changes in their vital activities and thus survive. Other varieties more rigid in their habits either die out or save themselves from extinction by sporulation.

This paper was originally begun with the purpose of applying the general principles of biology to the question of germ variation, and with these principles, together with special facts drawn from bacteriology, to build a scientific basis for a theory which I have for some time held as to the relations of dengue and yellow fever. Having occupied so much space with the treatment of the general subject, little more than an outline statement of the theory itself will be given.

That these two diseases are in some way closely related, the facts seem clearly to indicate. That they are generically the same, caused by modifications of the same germ, satisfies these facts and brings them into harmony with the principles of bacteriology and biology better than any theory so far propounded. It certainly does away with the necessity of assuming an "anomalous" form of dengue for cases which develop the characteristic type of yellow fever. It allows us also, if we make due mental reservation to do as is quite the practice now in the beginning of epidemics and under other circumstances where the type is mild, to call our cases dengue. It is well for us to bear in mind, however, that if the proper conditions, continued high temperature, high atmospheric humidity, and abundant organic waste exist, we will have our dengue, with the advancing season, developing the characteristic type and virulence of yellow fever. If this specially favorable conjunction of conditions does not exist, the germ may continue to propagate under the more volatile, diffusible, but less malignant form. In either case, the condition of the germ and the virulence and symptomatic expression of the disease are due to the properties bred into the germ by the conditions under which it is propagated. In the coast towns of Cuba, Mexico, Central America, and parts of the continent of South America, high temperature with limited temperature range, high atmospheric humidity and bad sanitation furnish the factors which have made the yellow fever germ. The uniformity of conditions here supplied have made of it, in its natural habitat, a definite and persistent type. There is no principle of biology to contradict the hypothesis that it is even here an adapted type generically related to a large group, vaguely denominated the zymotic group, which the more diversified climatic and seasonal conditions belonging to higher latitudes have differentiated into a number of varieties. In this group I would place dengue, its nearest of kin, and also influenza. An experience of some years in a section of country adjacent to the Gulf coast, where natural conditions approach the tropic, has convinced me that the clinical type known as dengue is a frequent derivation of the grip. Although admitting it to be rank heresy in the present state of medical opinion, I am willing to avow the belief that the extensive epidemic of 1897 had this origin, becoming in the later stages indistinguishable from imported yellow fever.

I see no inherent difficulty in the proposition that the influenza germ, though attaining its most characteristic type, as now recognized, and its greatest epidemic potentiality in sub-arctic regions, may occupy lower latitudes and there become diversified; that its irruptions in the past have planted the disease in the tropics, and that there the germs, finding quite uniform conditions, especially as relates to temperature, have developed into the indigenous adapted variety causing yellow fever. This looks, at first glance, like pure speculation, but the strong indications of kinship, especially marked, between influenza, dengue and yellow fever, and traceable in the other members of the zymotic group, studied in connection with the general principles which I have attempted to set forth, give to this view a more than speculative basis.

CARE AND REPAIR OF THE FEMALE PERINEUM.

Presented at the Meeting of the Mississippi Valley Medical Association, held at Nashville, Tenn., Oct. 11-16, 1898.

BY E. L. LARKINS, M.D.

TERRE HAUTE, IND.

To make a comprehensive study of the anatomy, physiology and pathology of the perineum, it must be preceded by at least a somewhat cursory description of its anatomic relations. In order to do this, the whole pelvis must be viewed in profile as well as in sagittal section, and that part which immediately concerns the subject is the inferior aperture or outlet.

According to Gray: "Its deep boundaries are in front, the pubic arch and subpubic ligaments; behind, the tip of the coccyx; and on each side, the rami of the pubes and ischium, the tuberosities of the ischium, and great sacrosciatic ligaments. The space included by these boundaries is somewhat lozenge-shaped, and is limited on the surface of the body by the scrotum in the male, and the mons veneris in the female in front; by the buttocks behind; and on each side by the inner side of the thighs. A line drawn transversely between the anterior part of the tuberosities of the ischium on each side, in front of the anus, divides this space into two portions." The anterior portion contains, in the male, the penis and urethra; and in the female, the vagina and urethra, and is called the "perineum."

"The posterior portion contains the termination of the rectum and is called the ischiorectal region." The ischiorectal fossæ are situated on each side of the rectum, and extend to the tuberosity of the ischium on each side. They are filled with a cushion of fat, which acts as an elastic splint to the bowel and a pad for the perineum, while allowing great distension of either without injury.

In this connection the parts of greatest interest are the sphincter ani, levator ani, and coccygeus muscles, which form the internal boundary of the ischiorectal fossa, and the superficial and deep perineal fasciæ junction, which form the boundary in front. These, together with the perineal body, allow of great distension of the vagina in parturition, and at the time of delivery of the head the latter is often stretched from three to five inches.

As described by Gray: "The perineal body fills up the interval between the lower part of the vagina and rectum. Its base is covered by the skin lying between the anus and the vagina, on what is called the perineum. Its anterior surface lies behind the posterior vaginal wall, and its posterior surface lies in front of the anterior rectal wall and the anus. It measures about an inch and a quarter from before backward, and laterally extends from one tuberosity of the ischium to the other. In it are attached the muscles belonging to the external organs of generation. Through its center runs the transverse perineal septum, which is of great strength in women, and forms on either side, behind the posterior commissure, a hard, ill-defined body, consisting of connective tissue, with much yellow elastic tissue and interlacing bundles of involuntary muscular fibers, in which the voluntary muscles of the perineum are inserted."

The levator ani is a broad, thin muscle, situated on each side of the pelvis. By union with its fellow on the opposite side it forms the floor of the true pelvis, and through its peculiar bony and tendinous attachments, together with the coccygeus, it forms a perfect sling for the rectum, and, in the male, for the prostate gland also. Their anterior boundaries are not united, to allow of the passage of the urethra, and, in the female, the vagina. This is by far the most important muscle of the pelvic floor. Its anterior and posterior fibers have bony attachments, but the larger central portion arises from a tendinous arch over the obturator internus. Its form is that of a horseshoe, and the peculiar attachments give it great power and a wide range of action. Occasionally the anterior borders are hypertrophied, giving rise in the female to severe vaginismus or even dystociæ of the pelvis. This occasional anatomic condition should always be taken into account when considering the management of tedious cases of parturition. The muscle is also classed as an expiratory one. The central tendinous point of the perineum is situated about half an inch in front of the anus, and is formed by the convergence of four muscles—the external sphincter ani, the accelerator urinæ, and the two transversus perinei muscles.

Attention is here called to this arrangement, and to the rectal attachments of the levator and coccygeus, in order to appreciate the philosophy of a statement to be made later. During the expulsive pains of parturition the action of all these muscles is upward, and being drawn tightly over the presenting part of the fetus, they produce dilation of the vagina and anus.

The pelvic fascia in the female forms an important part and a resistant structure in relation to the perineum, uterus, tubes, ovaries and bladder. It is divided into the superficial and deep layers. The superficial is continuous with that covering the whole body. The deep layer, which corresponds to the fascia Colles in the male, acts as one of the main supports of the contents and floor of the true pelvis. The fasciæ belonging to and covering the different muscles are important factors in maintaining the pelvic viscera in position. Especially is this true of that of the levator ani and coccygeus, and to a less extent of the transversus perinei. The different ligaments of the pelvic basin which act as anchor-chains and guy-ropes to the tense diaphragm may be torn in parturition or relaxed by inflammatory processes, and initiate retroversion and descensus. Muscles under tension can not and do not withstand a constant superimposed weight. The most important of these is probably the utero-rectal, which consists of two folds of peritoneum, embracing, and interwoven with, the musculo-fascial and connective tissue of the upper end of the vagina, and extends from the posterior surface of the cervix to the rectum, with some fibers passing to the sacrum.

In labor, when the musculo-fascial tissue gives way high up on the walls of the bladder and rectum, there will subsequently follow relaxation of the utero-rectal ligament, with prolapse of uterus and vagina, congestion from deranged circulation, and the local and reflex symptoms arising therefrom.

It will be seen from the foregoing that the perineum proper is made up of muscles, fasciæ, connective tissue, blood-vessels and nerves so interwoven in the inferior portion of the pelvis as to constitute a true floor. This conception of the structure is necessary in studying its relations to the pelvic organs and to the process of parturition. Many theories have been advanced and much has been written concerning the function of the perineum, and a great deal of ingenuity has been exercised in devising surgical procedures for the correction of pathologic conditions. The failures of the latter have been in proportion to the fallacies of the former.

It was not until 1883, when Emmett and Schatz published the result of their separate studies and observation upon the etiology of perineal lacerations, that its functions were thoroughly comprehended by the profession. Prior to that time it was thought to be the only, or principal, support of the uterus. The principal mistake has been made by confining observations to the perineal body. That the perineum proper has much to do with the support of the uterus and its adnexa there can be no doubt, and the varying degrees of procidentia, flexion and version, and the formation of cystocele, rectocele, etc., depend

upon the degree of injury sustained by the floor of the true pelvis. In addition, the fascia extending from the sulcus on each side becomes separated from its vaginal attachments by the soft parts being crowded up in advance as the head passes along the floor of the pelvis, giving rise to prolapse of the posterior vaginal walls. In the separation of the pelvic fascia the perineal body loses its principal support and tends to sink backward toward the rectum, producing a relaxed and elongated vaginal outlet. According to Emmett, the connective tissue of the pelvis spreads out in every direction and is held firmly in place by the fascia, suspending the pelvic organs on the same principle as those of the abdominal and thoracic cavities. The same author believes that the chief function of the perineal body, or commonly accepted perineum, is to give the needed support to the curve of the rectum in defecation and when in the upright position, so that it can not encroach upon the vaginal canal. In many cases submucous laceration or separation of some of the muscles and fasciæ entering into the structure of the pelvic diaphragm takes place, without rupture of the perineal body, giving rise to prolapse of the posterior vaginal wall and displacement of the pelvic viscera. In fact, the great majority of complete lacerations commence in the rectovaginal septum and are completed from within outward by the shoulders and hips after the head has passed the vulva. Exceptions to this are most of the cases of rupture due to the use of the forceps. If the lateral attachments of the levator ani give way, the laceration is apt to be supravaginal. According to Schatz, the common cause of this injury is crushing of the muscle at its insertion in the descending ramus of the pubes, by an oblique application of the forceps, the instrument being kept oblique during the extraction and with one blade pushed far forward against the pubic arch. This laceration may occur without operative procedure, and is commonly unilateral. The injury is very difficult, if not impossible, to repair, and is all the more to be dreaded, as prolapse and procidentia will almost certainly occur and can not be relieved by pessaries. The question of how much support is given the uterus and its adnexa by the perineal body and pelvic floor is one about which eminent authorities disagree. In laceration of the former, if the tear does not involve the sphincter ani, not much damage in this respect is done. But if the pelvic floor is injured, especially by laceration of the fasciæ, with or without involving the perineal body and sphincter ani, very disagreeable symptoms will soon arise. Yet, we may find procidentia and prolapse in women who have never borne children. In such cases, however, it is usually due to the effect of inflammatory changes or to atrophy from old age. In these cases, much is to be hoped for in the proper adjustment of pessaries, as the base of support — the levator ani muscle — is intact, and the leverage gained is usually sufficient to retain the organ in proper position For the purpose of studying the processes of parturition and the pathology of injuries to the pelvic floor resulting therefrom, the pelvic outlet may be divided into two segments—an anterior and posterior. The anterior or pubic segment is movable, and contains the bladder, urethra, anterior vaginal wall, and retropubic fat. The posterior segment is fixed; is attached by strong fasciæ interwoven with muscle to the coccyx and sacrum, and contains the rectum, perineum, and posterior vaginal wall. The anterior segment is the one most liable to injury during labor, especially stripping the levator ani fasciæ from the bladder and vagina. The posterior segment may become injured by being forced too far backward, and if the perineal body is lacerated the vagina loses its natural curve. This is apt to occur when the pelvis is of the male type, in breech presentation, and where rotation and extension of the head do not take place at the proper time. In injury to either segment, it is well to remember that the normal tortuous condition of the veins is lost, and congestion, from this cause and from obstruction due to absent or displaced muscular action, occurs, giving rise to many disagreeable symptoms.

We come now to the causes producing injury to the perineum. In the great majority this is due to parturition, but in a few cases it has occurred in the delivery of a large fibroid. In the list of this category I would place: 1, ignorant midwifery; 2, meddlesome midwifery; 3, mechanic difficulties; 4, precipitate or uncontrollable labor; 5, dry, irritable, rigid perineum, as in first labor; 6, untimely administration of ergot; 7, causes depending on the physician.

Ignorant midwifery is the advance agent of the gynecologist. No one should presume or be allowed to attend a case of confinement without some definite knowledge of the process and technic of parturition. From the time the woman begins to have well-defined pains of dilatation, she is encouraged by the midwife to use all her energy as an expulsive force, and by the time she delivers herself of the child she is utterly exhausted physically, not to mention the subsequent muscular pains and soreness that she must endure. With the onslaught of such forces, especially in primiparae, there occur, in the majority of cases, cervical and perineal lacerations of greater or less extent. Through ignorance of the laws of asepsis, infection very often takes place, resulting in inflammation of the uterus and its adnexa, peritonitis or fatal septicemia. The surviving cases finally drift to the gynecologist for relief.

Under the head of meddlesome midwifery I would note the too frequent administration of drugs designed to accelerate labor, too frequent examinations, rendering the vagina and perineum dry and irritable, by removing the natural mucous secretions, and which, by the frequent introduction of the finger, may convey septic infections. In this, may be included the often unnecessary application of the forceps. All the operations in this category are usually done by the physician to economize time—a very questionable procedure under the circumstances.

The mechanic difficulties of labor, in the relief of which, or on account of which, laceration of the perineum is produced, would make a long chapter in obstetrics and gynecology. First among these, are malpositions of the child, and malformation of the pelvis or child, or both. Face and breech presentations are the ones which, in delivery, are most likely to cause laceration, and especially when the arm happens to pass over the head. Malformed pelves and those of a pronounced male type render laceration of the perineum almost inevitable, and other conditions equally so.

While it is almost always desirable from the standpoint of the physician that labor terminate as soon as possible, yet we may have delivery effected so rapidly

from the powerful uterine contraction, aided by the abdominal muscles, that the integrity of the whole pelvic floor may be destroyed. This is most apt to occur when complicating first labors. When, in the process of labor, we find a dry, irritable, congested condition of the lower segment and neck of the uterus, vagina and pelvic floor, we should plan accordingly; for, unless these are relieved, we may expect trouble. The premature administration of ergot is mentioned, only to be condemned, being dangerous alike to the mother and child.

The causes depending on the physician are, in the main, unavoidable, because done in the very great majority of cases in an honest and intelligent effort to relieve an abnormal condition.

Given the conditions producing the injuries, how can we best avoid or reduce to a minimum their injurious effects? This can not always be successfully accomplished. Lacerations in varying degrees will occasionally happen under the most perfect surroundings, and in the most skilful hands, so that no physician can blame another for the accident. Nothing can be more crude or selfish, or savor more strongly of the charlatan, than to herald forth to the laity as faults of another that which he himself can not avoid. And it is the boast of ignorance and want of careful attention to the proper management of the puerperium for a physician, doing even a moderate obstetric practice, to say that he never had a laceration occur under his care. It is estimated that in about 20 per cent. of term deliveries, in general practice, unavoidable lacerations of the pelvic floor occur, except where incisions are substituted. It also appears demonstrated from statistics and the observation of gynecologists that the fascia is the first to give way. Time and space forbid the discussion of the many procedures recommended for the prevention of pelvic floor lacerations. In general it may be said that time should be given for full dilatation and relaxation by preventing too rapid advance of the head; the nervous irritability of the woman should be quieted; malpositions corrected, if possible, and at the time of delivery of the head, the woman should be instructed to cry out and breathe rapidly, in order to suspend the action of the abdominal muscles. This is best accomplished by the physician obtaining control of the mind of his patient and directing it to her work in place of her suffering. This can, in nearly every instance, be done.

When the head passes the vulva it should be supported, and in the delivery of the shoulders and hips, the child should be made to describe a circle corresponding to the axis of the parturient canal, in order to avoid making downward pressure on the perineum. This is done to reduce laceration to a minimum, especially submucous, commenced in the vagina and completed from within outward.

Time is the all-powerful factor in the preservation of the pelvic floor during the process of parturition. For the future comfort of the woman, this applies to all stages of labor. If to this was always added intelligent supervision, we would find many less invalids than now fill homes, public hospitals and private sanatoriums. The sympathy of attending friends, coupled with the usual impatience of the woman from her suffering, will too often incite even the physician, against his better judgment, to resort to means to hasten labor, resulting in disaster which time and patience would have avoided.

I have never touched a perineum for the purpose of support, but greater familiarity with the forceps leads to their more frequent use. In chloroform and morphin we have two potent agents, which when properly used, will be of greater service in supporting the perineum in its struggle for existence than any the physician can command, although by judicious and well-directed pressure on the *presenting part of the child*, he may retard its advance and render valuable assistance. The method of making pressure directly to the perineum against the presenting part of the child is to be severely condemned, and when practiced plays an important part in the production of these lacerations.

Goodell says: "When the perineum is very rigid, I relax it by hooking up and pulling forward the sphincter ani, with two fingers passed into the rectum, while with the thumb of the same hand I make the needful restraining pressure upon the head. For this method I claim the following advantages: 1. By pulling up the sphincter ani toward the pubes, not only is nature imitated, which always dilates the anal orifice, but the perineum is brought forward without direct pressure, and its dilatation is diffused over its whole surface, causing a corresponding relaxation of the strain on the posterior commissure in the line of its raphe. In addition, its muscular fibers are crowded up to, and consequently strengthen, the line of greatest tension—just as a prudent general hurries up reinforcements to the point of attack. 2. The same force which dilates the sphincter ani compels the occiput to hug the pubes, and favors extension, especially if the fingers in the rectum are hooked over the prominence of the fetal face or over the chin. 3. This aid is not liable to sudden interruption from the movements of the woman. 4. The thumb of the same hand together, if needful, with the fingers of the free hand, can, by direct pressure upon the presenting part, restrain its too rapid advance, without exciting that reflex uterine action which is so frequently evoked by the irritation of contact with the perineum. 5. The circulation of blood remains free; the nerves are not benumbed by double pressure, viz., by that of the hand and that of the presenting part; and the perineum, therefore, stays in its natural condition, that of a living, elastic and sentient tissue."

I quote this eminent authority because his reasoning and conclusions are admirable, and adoption of the practice gives gratifying results. But the method here recommended, which I have never seen published nor heard advocated, goes still further, and in cases where such a procedure is necessary gives better results. The statement of Goodell that nature dilates the sphincter ani can be easily verified in nearly any case of labor. When the perineum is rigid and unyielding, full dilatation of the sphincter ani may be resorted to according to the Eastman method for vaginal hysterectomy. In the first place it has a wonderful relaxing effect on the muscles of the whole pelvic floor; and second, gives from an inch to an inch and a half more room in the vagina—a great desideratum. The method of dilatation is simple, easy and effective. With the patient under anesthesia and lying on her side, place the ends of the fingers of one hand in the form of a cone, and thoroughly lubricated with vaselin, so as not to erode the epithelium, gently but firmly, with a rotary or boring motion, dilate the sphincter. This method of rectal dilatation for any purpose is superior to all others. The result is surprising. In place of rigid, hot and

dry tissues, they become soft, moist and relaxed, and the labor terminates without accident. I am convinced that this practice will save many a perineum otherwise doomed to destruction, and in many cases of tedious labor render the application of the forceps unnecessary.

Given a perineal or pelvic floor laceration, when and how shall it be repaired? The question covers a broad field in gynecologic surgery, and no fixed rule will apply to all cases. We find some advocates of the practice of making an immediate repair in each case, but the evident obstacles to such a close rule militate against a reasonable degree of success. Then, too, the manner of repair must be governed by the character and degree of the injury, the state of the tissues entering into and surrounding the field of operation, whether friable, cicatricial or atrophic, and the judgment and ability of the operator to obtain the best result. Speaking from the standpoint of the general practitioner, an immediate repair can seldom be successfully made, even in a favorable case, on account of sanitary conditions as usually found, the absence of a trained nurse accustomed to care for surgical cases, and the additional restraint necessarily put upon the woman during the greater part of the puerperal period. When considering the propriety of the immediate repair, the character of the labor in which the injury was produced is probably the most important factor for analysis. In cases of tedious labor, especially those from narrow pelves, where the whole pelvic floor has been subjected to long-continued pressure and finally overdistension, producing a bruised, edematous and weakened condition of the tissues, perineorrhapy, no matter how skillfully performed, will be a failure. As a rule this will apply to cases of tedious labor from any cause. In many of these cases there will also be a greater or less degree of cervical laceration, contributing to an irritant lochia preventing union. The cervical injury should be repaired, not only as a step in the preparation for perineorrhaphy, but of necessity for the future welfare of the woman, as it is an established fact in pathology that long-continued irritation of an abraded surface is an exciting cause of the proliferation of malignant tissue, especially from an epithelial matrix.

The physical condition of a woman in the puerperal state is not as favorable to the healing of injured tissue as it is in two or three months after confinement, when the system has adjusted itself to the normal standard of health. Then a lacerated wound will not unite as kindly as an incised one, principally because approximation of the surfaces can not be as perfectly secured. Infectious and contagious diseases, and above all gonorrhea, will render futile any attempt at repair at this time. Owing to the relaxed and edematous condition of the parts it is difficult or often impossible to bring the lacerated surfaces properly together. In this connection it must never be forgotten that what appears at the time to be an extensive laceration may in a few weeks be of trivial import; I am inclined to the opinion that many of the excellent results claimed for the primary operation are really cases of this kind. On the other hand, it is equally true that extensive and serious injuries occur without being at the time discoverable. Taking these things into consideration, it is usually best to keep the genital tract as nearly aseptic as possible, and in from six to ten weeks make the necessary repair, which, with a good nurse, can usually be done at home. The principles underlying the operation are an observance of the rules of good surgery in general, and minute attention to details in particular; and the more carefully the latter are looked after the more certainly will success be achieved. Successful repair of a severe pelvic-floor injury requires greater skill and attention than trephining the skull or making a shoulder-joint amputation. The evident indications are to replace and repair structure and restore function. To accomplish this the surgeon must have a knowledge of the conditions present as a whole, and a definite idea of what he desires to do before commencing the operation. We can not successfully operate by looking through other men's eyes, and each case must be a law unto itself. The manner of making the repair will depend largely upon the judgment of the operator; and the restoration of function—the only evidence of success—will rest entirely upon his skill in performing the work. Unless the muscles, fasciæ and elastic tissue are united, but little if any good will be derived from the operation. The choice will probably be made between the denudation of Emmett and the flap operation of Tait, or some modification of one or both, to suit the case in hand. Cases will be met with, rather frequently, where considerable tissue has been destroyed, either from sloughing due to extreme and long-continued pressure during confinement, with subsequent infection, or from repeated but unsuccessful attempts at repair. In these much cicatricial tissue will be found, which must be removed or failure will result.

In another class the tissues are friable, and when denuded, capillary oozing is profuse. Such tissue heals slowly or not at all, and great difficulty will often be experienced in obtaining union. Such patients need preparatory treatment by the proper administration of tonics of bark and iron, arsenic, strychnin, etc., and regulation of rest and exercise, diet, etc., before operating. The condition is closely related to the hemorrhagic diathesis. The cases of permanent muscular atrophy are incurable. Those of partial atrophy from disuse due to the long continuance of the injury can usually be relieved, as restoration of the injured muscles brings them into use with subsequent development.

Time and space forbid entering into the technic of the operation. Suffice it to say that it differs according to the direction and extent of the injury and the parts involved. No one operation will suffice for all cases, and a good maxim to remember is, replace, repair, restore.

Dispensary Building.

PARALYSIS IN CHILDREN.

ITS SURGICAL TREATMENT.

Read before the Mississippi Valley Medical Association, at Nashville, Tenn., Oct. 11-16, 1898.

BY ALEX. C. WIENER, M.D.

CHICAGO.

Being confronted frequently with cases of paralysis in children, I was impressed by two facts: 1, how often cerebral and spinal paralysis are confounded, although the pathology and clinical symptoms of the two affections are diametrically opposed to each other; 2, as to the urgent necessity for the surgeon to find operative means which enable him to dispense with tiresome mechanic treatment. Apparatus is well enough to hide the deformity, but unfortunately it

fails to cure the cause of it. The discussion of the earlier stages is omitted purposely, since the surgeon, as a rule, is not confronted with paralysis in children until medical and electric treatment has been exhausted, or in cases where there is no spontaneous improvement any more to be looked for, much the same as we are not approached for surgical intervention in gangrene of an extremity before the line of demarcation becomes apparent.

To facilitate the understanding of the fundamental differences of infantile cerebral palsy caused by lesions of the cortex of the brain, and those originating from inflammatory conditions of the cells of the anterior horns of the cord producing infantile spinal paralysis, by the kind permission of Dr. Patrick, I would refer to his sketch of motor neurons demonstrated at the last meeting of the Association. The difference in the symptoms of both diseases is striking. Lesions of any part of the upper neurons cause paralysis, spasticity of certain muscular groups, no muscular atrophy, no change in the electric reaction, exaggeration of the deep reflexes. Now note the consequences of lesions in the lower motor neurons: paralysis, flaccidity and atrophy of the muscles, reaction of degeneration, loss of the deep reflexes. You notice the common symptom of the two affections is paralysis. But what a distinction in these paralyses! In cerebral spastic paralysis the influence of the spinal innervation becomes predominant, increase of the tonicity and of mechanic irritability in certain muscles being the consequence. This hyperinnervation of one muscle group is overpowering its antagonists and renders them practically useless. But they are far from being paralyzed, which would imply a deprivation of their normal innervation; they are merely atrophied from overstretching and disuse; these symptoms of an otherwise hopeless affection are the very ones amenable to active surgical procedures, which are to adjust the disturbed balance of two antagonistic groups.

It is simply ridiculous to attempt to cure this affection with any mechanic contrivance, since no apparatus can be borne for any length of time which is strong enough to permanently restore the function of muscles overcome by their spasmodic opponents. It is high time to do away with patchwork in orthopedic surgery. Liberate your patient from being a slave of cumbersome and expensive appliances for all his life, by employing simple and sound surgical principles. Take a most frequent instance, paralytic talipes equino varus. The belly of the gastrocnemius in this case being trophically shortened, works on a foot which is already in a stretched position, thus depriving the flexors of the foot of their function. Now, in order to have these muscles regain their tonicity, it is necessary to weaken their opponents by tenotomy of the Achilles tendon. The severed ends must then be held at a distance of at least one inch during the process of healing, by forcing the foot in an extreme calcaneus position. On removal of the plaster-of-Paris dressings six weeks after, the pronators and flexor muscles of the foot have recovered sufficient tonicity to hold the foot in a normal function. The spastic contractions of the knee-joint demand tenotomy of four muscles; the gracilis, biceps on the outer side, semitendinosus and membranosus on the inner side. The open incision in severe cases is preferable to subcutaneous tenotomy because of the possibility of resecting a piece of the tendon; furthermore, an injury of the external popliteal nerve, which runs close to the inner side of the biceps tendon, is then out of the question. In spastic paralysis of the thigh Lorenz has introduced myorrhexis, which means a subcutaneous tearing of the adductor muscles, as a bloodless procedure to overcome it. The operator who always bears in mind that he is to overcome the rigidity of the muscles will never have the experience of a fracture of the bone, as he does not direct his force against the femur. In extreme cases we should not be afraid of loosening the attachments of the adductor muscles from the pelvis. After the operation the legs are held in an over-corrected position with a plaster-of-Paris dressing, and are gradually allowed to resume their normal position. Of course, in all these cases the weak opponents are strengthened by hot and cold baths, the different forms of massage and the faradic current. This after-treatment should be continued for at least a year, by well-trained attendants.

It takes no little experience and skill on the part of the surgeon to gain the confidence of the irritable patients, who have grown suspicious from former tortures with apparatus. Another point is always to be remembered in outlining the course of treatment. Sayre has taught us that spastic paralysis of apparently cerebral origin may sometimes be relieved by the removal of some peripheral reflex disturbance, as a phimosis or an occlusion of the prepuce of the clitoris. A circumcision or deliverance of the latter is all that is required to cure these cases permanently. To the unfortunate ones who have become idiots, or who are unable to uphold the trunk and the head in an erect position, the surgeon can not bring relief. In concluding the discussion of this subject, it may be stated that in deformities resulting from cerebral paralysis, most of the orthopedic surgeons agree on the uselessness and harmfulness of mechanic appliances. They should be discarded.

I come next to consider infantile spinal paralysis from poliomyelitis anterior. The principles which govern the surgeon in treating infantile paralysis are laid down by H. L. Taylor in his paper on hygiene of reflex action, in the following classic language: "In the neuro-muscular degenerations following acute anterior poliomyelitis it is especially important to restore to the paretic extremities so far as possible the stimuli of locomotion and their normal associated movements, without the inhibition of insecure footing and strained tissues; and it is for the specific purpose of restoring to the damaged cord and muscles the cutaneous muscular and articular stimuli of locomotion that apparatuses are constructed." And again: "normal reflexes of locomotion are broken up and a wasteful and cumbersome set installed, subject to constant cerebral interference in the efforts at balancing and progression, and additionally disturbed by the strain in weakened muscular and joint structure which is rendered inevitable by the lack of balance between opposing groups; mechanical protection with muscular training enables the patient to acquire a better set of reflexes and promotes the nutrition of the part." In the construction of apparatus for the correction of deformities and for the protection of muscles from wasting in consequence of poliomyelitis anterior, I endeavor to meet two physiologic requirements: 1, that a constant motor irritation be imparted to the inactive muscles by the action of the apparatus itself, which at the same time corrects the deformity; 2, increase of the arterial blood-supply and the stimulation of the lymph circulation.

A boy, 15 years of age,[1] had an attack of poliomyelitis anterior when 5 years old which left a complete paralysis of the four extremities and a paresis of the muscles of the trunk; no faradic reaction of any muscle except the extensor digitorum communis. The legs were flexed in the hip at about 40 degrees and in the knee-joint at right angles, with flail-like conditions of the ankle-joints. The case was given up by a prominent specialist of nervous diseases as absolutely hopeless. At first passive and then active exercises were made on a stationary bicycle, a so-called "home trainer," which later was replaced by a walking apparatus invented for this patient. The trunk was supported by an extension corset. The boy has recovered the active function of his legs and the control of the rotary muscles of the femur. All that is left to do is the operative straightening of his knee-joints, which had to be postponed on account of the weakness of the heart.

In replacing paralyzed muscle groups with elastic straps their points of insertion are so arranged that every step imparts a motor stimulus to the crippled muscles and the corresponding nerve-centers. The principle is described in a paper entitled "A Contribution to the Treatment of Clubfoot" (*Medicine*, April, 1898). Certainly the mechanic treatment is tedious, time-consuming, and therefore not applicable to the majority of cases who are recruited from the poorer classes. Nicoladoni, professor of surgery at the University of Innsbruck was the first to employ an ingenious surgical procedure to quickly restore paralyzed muscles to action. In a pes talipes calcaneus he connected the severed Achilles tendon with the normal tendons of the peronei muscles. The foot could now be extended, and the gait had decidedly improved. About a decade elapsed before the great practical value of this method was realized by a few surgeons. The first operation in America was performed by Dr. B. Parish, May 15, 1892, and is described in the *New York Medical Journal*, Oct. 8, 1892. For complete paralysis of both tibial muscles resulting in a talipes valgus he connected the tendon of the external pollicis longus with the tibialis anticus. Milliken and Goldthwait developed the method, the latter reporting 40 cases of tendon and muscle transplantation at the last meeting of the American Orthopedic Association. Drobnik amplified the application of the method by introducing a new principle. He divided the belly and tendon of a healthy muscle and sewed this grafting to a paralyzed muscle in the same way as small channels are branched off a river to water dry fields.

As the electric examination in nervous children often gives unreliable results, the whole field must be exposed to the eye by a large incision. The color of the paralytic muscle will then be found as yellow as wax; the normal muscles are dark-red, while those paretic or atrophic from disuse are pink colored. The fittest for the division of function are the muscles gifted with a flabelliform origin. Following the course of the fibers from the distal end, the muscle is divided with a blunt instrument up to its point of insertion, the surgeon always being on guard for the supplying nerves. The length as well as the thickness of the piece of tendon to be grafted is then carefully apportioned. Existing deformities of the bones or contraction of the soft tissues are to be corrected previously, so that on pulling out the tendon of the paralyzed muscle the extremity readily assumes an overcorrected position. After splitting this tendon the active one is grafted into the cleft by some in a buttonhole fashion and fastened there with a row of fine silk sutures with the greatest possible preservation of the sheath. It is well to have the grafting piece comfortably relaxed by uniformly stretching it before it is fastened. The unyielding fascia is stitched together as best we can without giving rise to undue pressure to the underlying structures. The wound is closed by a buried continuous kangaroo catgut suture, fortified by a couple of silk sutures. The foot is then held immobilized in an overcorrected position by a plaster-of-Paris dressing for about three weeks, in order to secure a perfect union of the tendon. To insure the good result, the rules of asepsis have to be religiously carried out, since the least infection jeopardizes the union and increases the danger of agglutination of the sutured structures.

The amount of operative possibilities is immense. I shall, however, select only a few instances frequently met with in daily practice. In talipes equino-valgus we may supplant the tibialis anticus by the extensor hallucis longus. In using the extensor digitorum communis, at least one-half of it has to be preserved, as this muscle is indispensable for the elevation of the outer edge of the foot. When too much weakened, the muscle may be augmented by a piece of the peroneus muscle. Thus there takes place a shifting of contractile muscular substance from the outer to the inner edge of the leg. Vice versa, in paralysis of the extensor communis, we utilize the extensor hallucis or a part of the tibialis anticus or the peroneus. The deficiency of the peronei muscles is to be made up by taking graftings from the anterior and posterior groups of muscles, or still better so that each peroneus muscle is supplied with fibers of the stretcher of the toes and the lifter of the heel. In a case of insufficiency of the anterior and outer group the Achilles tendon is divided in three parts, the inner of which is connected with the anterior group, the outer with the peroneus longus. To restore the function of the Achilles tendon a combination of parts of the tibialis anticus, the flexor digitorum and the peroneus has to be employed. This artificial change of arrangement of muscles has elicited the singular physiologic fact, that at the same time we transmit the function of one muscle to another, there is taking place an alteration of the reflex activity in the nerve-centers of the muscles. Hence the improvement of the function of the extremity is by no means a mere mechanic act. The treatment, operative as well as mechanic, has as its main object a nutritive stimulation and reactivation of the nerve-centers of the paralyzed extremity. The two methods of treatment are not in opposition, but are working harmoniously along the same line in their aim at accomplishing ideal functional results. You are ready now to infer arthrodesis has exhausted its usefulness as far as the ankle-joint is concerned. I have confined my remarks to the operations on the leg, as my experience is limited to this part.

In conclusion, I beg this excellent assemblage to consider the salient feature of this paper, the proof that orthopedics is surgery and is resting also on the broad foundation of physiologic surgery.

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[1] This case was referred to me by Dr. Chas. L. Starkel of Belleville, Ill. The case will be fully described when the straightening of the legs has been made perfect; in connection with this a description of the walking machine in detail will be given. The straightening of the boy, together with the physiologic growth, amounted to 5 inches in 15 months.

MORTALITY IN ABDOMINAL SURGERY. IS IT TOO HIGH?

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In tabulating the below reported cases, with only one death, I do not do so with any other desire than that of one who has long maintained that the mortality in the collective work of many operators is too high, and who would call attention to some of the causes of this high death-rate, and how best to remove them. This high death-rate has always prevailed, but only in the last few years has the responsible and difficult abdominal operation been placed in the hands of so many novices. These operations are being performed by many who are absolutely unprepared with the proper knowledge of the rudiments of correct work. Two or three factors have been instrumental in bringing about the existence of this unfortunate and dangerous class of surgeons.

Antiseptic and aseptic technic, while factors in reducing the mortality, will not prevent an uneducated finger from stripping two coats from an adherent coil of ileum, while removing diseased masses from the pelvis, neither will a six weeks' post-graduate course on the high seats of the amphitheater, with a field-glass, prepare one for the correct reparation of such an injury to the gut when inflicted. Bargain-counter surgery is responsible for many deaths annually. It is occasionally the case that the surgeon giving the largest percentage of his fee is the one selected to do these operations—not that he is most competent, and has the largest percentage of recoveries, but that his price for the case is highest. A divided fee, as a rule, gives the same percentage of mortality. In other words, the less prepared the man to do good work, the higher his bid for cases. In the discussion of any subject pertaining to the saving of human life, sentiment, politics and religion should not take the precedence of honesty, skill and good judgment.

Any surgery that involves the handling of and injury to life-essential organs must, of necessity, require more care, judgment and skill than that in localities of less importance to healthy and comfortable existence. Of all surgery, that of the abdomen and pelvis entails the greatest direct risk to the life of the patient, hence the just birth and timely existence of abdominal and pelvic surgery as a specialty. That it should be so separated from general surgery is amply proven by past records of various operators. If a half hundred intraperitoneal operations are reported, with no deaths, or with only one death, the one most likely to doubt the honesty of that report will be the surgeon who has a mortality of 25 per cent. in like cases. The time has arrived when the practitioner (and the patient ready for the operation) should know what percentage of losses is incurred by the surgeon to whom the case will be intrusted.

The percentage of recoveries should guide, and not the price paid. I am glad to say that honesty of purpose, prompted by a desire for the patient's welfare, will in the great majority of cases, guide the family physician in the selection of his surgeon. The exception to this rule is rare indeed. We have a number of surgeons in Kansas City who are, I am sure, second to none in this country, in their operative technic, diagnostic ability and pathologic knowledge. Any ideas of criticism advanced in this paper are free from individual application or thought applied to the work of any one in view. My discussion of this phase of the subject is one of application to that class of incompetents who rely upon the price paid, and other intrigues, to get cases, regardless of their lack of ability to cope with the intricate problems of abdominal surgery.

The application of sound diagnostic judgment and accurate pathologic knowledge often enables the operator to draw the line between operable and inoperable cases, with reference to both saving life and effecting a complete cure. A septically overwhelmed patient, without a pulse, suffering with diffused peritonitis, would hardly be operated upon by a surgeon of ability and experience, even though that patient was able to laugh and carry on an intelligent conversation a few hours before death. On the other hand, many cases are returned to their homes as inoperable that, in the hands of a skilled operator, could be relieved. Timely operations should be urged upon all occasions, as the destructive inroads of the disease frequently quickly convert the easy into the most difficult and tedious procedures, often thus thwarting the surgeon's endeavors to effect a cure or restore function.

A surgical disease, the tendency of which is toward progression if let alone, should always receive early and thorough surgical attention. The United States is the birthplace of abdominal surgery, and very few intraperitoneal operations have originated in any other country. America is not only the parent of the early operators, but the home, as well, of perfect surgical technic in the performance of most operations first performed in other countries. I do not desire to detract in the least from the great work of the general surgeon, neither have I a desire to laud the work of the specialist, only in so far as it is necessary to show that a concentration of one's thoughts and practice along a special line must, of necessity, beget more accurate deductions and uniformly better results in his work. It is not only necessary that the abdominal surgeon be thoroughly versed in the anatomy, physiology and pathology of this operative field, but equally as important and essential is a thorough familiarity with the most minute details of the principles underlying the operative technic of this special class of surgery. A single improperly applied stitch may cost the life of the patient. This is only one illustration of the many errors in technic too often overlooked.

In reporting a late series of seventy-four cases operated on at the Scarritt Hospital in this city, with one death, I anticipate that a selection of cases and a failure to report all deaths will be suggested by that class whose mortality remains above the "teens." The nursing at this institution is of the very best, and the hospital environments are such as to be of much value in a general way toward the maintaining of a low mortality. Of much value in this class of work are good post-operative sanitary surroundings to insure a perfect convalescence. The nursing of an abdominal case requires a special class of trained nurses, or in other words, nurses who have had ample training in the correct way of caring for these cases according to the ideas of those who have had an abundant experience. A good, honest nurse will surely be of great assistance in holding down the mortality list.

In this list of seventy-four cases there has been no selection of cases, as no case has been sent away without an operation, and in every case well-marked operative indications have been present, the same being verified by the lesions removed at time of operating. In one case only of this list, was there no operation performed. In that case I did a confirmatory incision in an extensive involvement of the peritoneum from cancer. I use the term "*confirmatory* incision" in contradistinction to the *exploratory* incision, so frequently resorted to by many surgeons who should be diagnosticians as well as mechanics. No opinion before an operation is worse judgment than a wrong diagnosis. It is far easier to prevent a peritonitis than it is to cure it when once started. Asepsis in its strictest sense has been practiced in my work. Every preparation of the field of operation has been most scrupulously carried out by my assistant and myself. Sepsis in some of its manifestations is responsible for many deaths where even the operative technic has been well performed. I use but one assistant, and he is thoroughly in accord with the modern views of cleanliness being essential to a low mortality. An inexperienced assistant, especially if he does not accept the necessity for cleanliness as essential to success, will increase the operator's mortality. I use as few instruments as possible, and endeavor to keep my "abdominal kit" free from all outside contamination. In most of the cases here recorded Dr. John V. Green has been my assistant. An assistant should anticipate every movement of the operator, and always render help at the proper time and right place.

Near relatives have been permitted to see the patient occasionally, but it has been my endeavor, early in the case, on every occasion to exclude meddlesome and curious friends, unless some good reason were given why they should visit the case. I have endeavored to admit the case a few days before the time set for the operation, that proper diet might be given, and any other preparation suitable for that particular case carried out. A free catharsis by magnesium sulphate has been one of the principal preparatory routines. Strychnia sulphate in 1/40 gr. doses, each four hours, for a few days prior to and for a week after the operation, is given in most cases. Patients are urged to drink large quantities of water for a few days before the time set for the operation, as this in a measure prevents the thirst usually following the opening of the peritoneal cavity. Liquids are withheld for twenty-four hours after the operation, or longer if much nausea exists. This starves the tissue for water and causes the peritoneum to drink up any fluids in its cavity, thereby diminishing the culture fluid for the growth and multiplication of any micro-organisms that may have gained an entrance from outside sources during the operation, or have by any unavoidable accident been liberated during the breaking of a septic cavity in its enucleation. I have avoided raising the temperature of the operating room above 80 degrees F., believing that a patient may become exhausted from a profuse and protracted sweat inaugurated in a superheated operating room. Most operations, from choice of time, have been in the forenoon. This gives the operator several hours of daylight in which to see the patient after the operation is completed, and the patient goes on the table soon after a night's rest, and not too soon after the beginning of the fasting period. I make all my preparations for operations, such as cleansing the instruments, before sending them to the sterilizer. Sterilization is effected by boiling in filtered water. No antiseptics, save a little alcohol for the hands, are ever used, but instead reliance is placed upon thorough cleanliness and pure, boiled, filtered water. I am a firm believer in the bacterial origin of septic processes, but also believe that these micro-organisms can not exist in dangerous numbers where thorough cleanliness is obtained, and boiled, filtered water is freely used.

Visitors are asked to refrain from talking and to avoid moving about in the operating room. This prevents any confusion or interruption on the part of the operator from remarks made by onlookers, and causes less dust and flying particles to be moved about the room and into the field of operation.

In this series I have not used a sponge. Plain, sterilized gauze pads have answered every purpose, and are far less dangerous to the patient. The purest and strongest Chinese twist has been used for pedicles. This silk is reliable as to strength, can be used in very small sizes, and is easily sterilized by heat at time of each operation. In none of my cases have I had cause to regret the use of the silk ligature. Only the amount of silk expected to be used is ever boiled, as a second boiling weakens it. Silkworm gut sutures through all parietal structures are the material used, and the method of closing the abdomen. Ether has been the anesthetic used in most cases, and contrary to the general belief, has not been followed by more nausea than if chloroform had been given. Every preparation for operation has been completed before a single inhalation of the ether is given. This shortens the time of anesthesia. A short incision minimizes the risk of septic material entering, prevents escape and consequent handling of bowel, and reduces the number of post-operative hernias. A number of these cases have been infected cases, such as ovarian abscesses, appendicitis, etc. Without exception, I have used drainage in such cases. I am firmly convinced that the proper use of the tube makes it a life-saving agent. Surgeons using the tube correctly will continue its use. It is not an admission on the part of the operator that his work is imperfect when he uses a tube.

Careful hemostasis has been carried out in all cases, as many of them were very anemic at time of operation. If less blood were lost in many surgical operations there would be fewer deaths from so-called shock. Quick and complete surgery will generally bring good results. Appendicitis cases, sixteen in number, have represented every clinical phase and pathologic condition found in this disease. The appendix has been removed in every case. A number of the cases were drained. I am satisfied that the more thorough the appendiceal surgery the lower the mortality. In one case, a transfusion of normal saline solution was necessary to save the case, owing to a profuse hemorrhage following the operation. This patient was a "bleeder," as I since learned that he came near losing his life from a hemorrhage following the extraction of a tooth. The confirmatory incision was a small opening made to satisfy others interested in the case that the diagnosis of malignancy was correct. The case of intestinal anastomosis was a lateral joining by aid of the Murphy button, the case being a malignant one, with the obstruction in the ileum and cecum. The anastomosis was made with coil

of ileum, and the sigmoid. Intestinal resection was a case of extensive adhesions following an ovariotomy, three years ago. The gut was so completely bound down and constricted that it was necessary to remove twenty-six inches, the end-to-end joining being also made with the button. Mesenteric cysts, two in number, were incised, packed and drained until closed. The desmoid tumor case was one of those very rare forms of growth affecting the abdominal walls in women. The growth usually follows a pregnancy, and is found, in most cases, in the inguinal region. It is non-malignant, but repeated operations are frequently required to remove it. In this case three operations were performed before the growth was headed off and cured.

Many of the cases here tabulated had multiple operations at one "sitting," such as perineorrhaphy, curetting, etc. The list includes twenty-two different operative procedures:

Appendectomy	16
Salpingo-oöphorectomy (pus)	20
Nephrolithotomy	1
Ventrofixation (uterus)	2
Desmoid Tumor	3
Colostomy	2
Vaginal Vault Drain	1
Ovariotomy (for cyst)	5
Femoral Hernia (cure)	2
Tubercular Peritonitis	1
Hysterectomy, Abdominal	4
Confirmatory Incision	1
Ectopic Gestation	1
Nephrorrhaphy	3
Intestinal Adhesions	2
Intestinal Anastomosis	1
Intestinal Resection	1
Strangulated Femoral Hernia (1 died)	2
Mesenteric Cyst	2
Cholecystotomy	2
Vaginal Hysterectomy	1
Nephrotomy	1
Total	74

The responsibility of the abdominal surgeon is peculiarly binding and great, as many operations are performed to restore comfort and not for the purpose of saving life, yet the dangers incident to the performance of any abdominal operation are always present, and should always be weighed in every case. Many, many times in the midst of an operation, the mind of the surgeon will revert to the scenes of the little family circle of the patient whose confidence and life he has in his hands. Often the dear little ones of the mother or father on the operating-table will pass in mental review before him, thus reminding him, as it were, of his duty and responsibility. Many times he will ask himself, in these anxious moments: "Will I be able to save and return this parent, restored to health, to those dear little ones left at home, at an age when parental guidance means not only immediate comfort and happiness, but the molding of their future?" Perchance the patient is a little tot, the whole life and joy of its fond parents—for disease does not discriminate in selection, and only too often we are compelled to operate on these little unfortunate sufferers. Can any one feel that he is warranted in assuming this responsibility unless, by a thorough training and an equal knowledge of all the intricacies of this responsible class of surgery, he feels competent to meet any emergency and to quickly resort to the proper method of meeting the same?

APPENDICITIS.

A CONSIDERATION OF SOME OF ITS CAUSES.

Read before the Cambridge Society for Medical Improvement, Dec. 26, 1898.

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Perhaps in the whole realm of medical science no subject that has had its birth within the last decade has elicited more discussion among professional observers, and has obtained a wider interest with the masses than has that of appendicitis. It seems, therefore, that from whatever point of view any of its different phases may be presented, something may be gleaned that will prove of value for the better understanding of the complications which it may involve.

In some of the earlier reported cases much importance was attached to the occasional presence of a fecal concretion, or of a foreign body within the appendix. The rarity, however, of finding such foreign matters, or of securing adequate evidence that extraneous elements are really controlling factors has led to the disregard, in large measure, of the view that they have any marked effect in the production of the disease.

Catarrhal inflammation has been mentioned as a cause, especially that form of the condition occurring in diarrheal disease. If it be true that appendicitis is dependent upon such morbid processes, the number of cases amounting almost to an epidemic, would be expected to follow during some of the months comprised within the heated term, or within some of the seasons or conditions favoring intestinal disturbance.

Another view put forth as to the cause is, that the appendix vermiformis is a functionless vestige of organs once necessary for the conservation of our ancestral forms of life, and that by the lapse of time and the alteration of conditions, such evolutional changes occurred in the organism as to leave this part of the intestinal tract a mere relic or representative of a rudimentary apical portion of the cecum. The vermicular process, though evincing an analogy of conformation with that of some lower forms of animal life, has by some been regarded as of low vitality, and is therefore more susceptible to changes, and prone to become the seat of morbid processes. The condition which is here alluded to is in some respects not unlike that of the mammæ, the uterus, and its adnexa after the occurrence of the menopause. The functional activity pertaining to the development of the several organs having been accomplished, the highly vitalized condition takes on retrograde changes, and thus fails to afford protection against the inroad of disease.

In this connection it might not be uninteresting to refer briefly to some of the features of the appendix vermiformis, and to endeavor to inquire how firmly such a view can be substantiated. In doing this I deem it proper at first to refer to some of the points enunciated by Professor Haeckel at the Cambridge Congress of Zoölogy, which was held in August, 1898, as reported at the time by the London correspondent. Professor Haeckel, after making mention of recent discoveries of fossil remains in Java, Madagascar and Australia, which render more complete the evidence in the several steps in evolution, said substantially that all mammalia were of monophylitic origin, that is to say, that their origin was from one common parent form, from *Monotremata* upward to man. He

said that all living and extinct mammalia which have been studied, were descended from a single common ancestral form that appeared in the Permian or the Triassic period. He considered this form or type of animal life to be derived from some Permian, or not unlikely carboniferous reptile allied to the *Proterosauria* and *Theriodontia*, which was descended from a carboniferous amphibian of the group *Stegocephala*. These amphibians in turn were derived from Devonian fishes, and these in their course from the lower vertebrates. The chief fact brought out by Professor Haeckel is that man is a primate, and that all orders of primates, such as lemurs, monkeys, anthropoid apes and man, had their descent from one common stem.

In the discussion of this subject it is not necessary for our present purpose to trace descent from more remote ancestors, for we are thus assured beyond a reasonable doubt that all mammalia upward to man had their origin from one parent form; from a primitive form of *Monotremata*. If we now examine the alimentary canal of a fowl—a present representative, in some respects, of this type—we shall find that there are two long cecal tubes, which have their openings in the intestine at points not far from its termination. The axes of these tubes form an acute angle to the axis of the intestinal tract. Their function seems to be to assist in furnishing an abundance of watery or fluid secretion for facilitating absorption by the vessels of the intestinal mucosa and for expediting the extrusion of effete matter. The same anatomic arrangement is found in the parrot. The cecum in man is a short, spacious pouch, into which the ileum opens; the appendix opens on the inner side of the bottom of the cecum. Its diameter is said to be of an average of about three lines. The blood-supply of the appendix is derived from a vessel that has its course near the free concave margin of the mesentery and is a branch of the ileocecal artery. Its coats are thick and of firm consistence; its mucous tissue is supplied with a large number of solitary glands. In structure the appendix may be said to resemble very closely the intestine.

By some writers the appendix has been described as a rudiment of a more extended cecum found in all mammiferous animals with the exception of man and the higher class of *Quadrumana*, such as the ourang-outang and chimpanzee, and among marsupials the wombat. According to Quain, the coats of the appendix vermiformis are as thick as those of the cecum, with which they are continuous, for both are lined with mucous membrane, and the muscular fibers of the one are prolonged into the other. In early periods of fetal life no distinction is perceptible between them; they form a long tube projecting between the folds of the small intestine, and are continuous above with the colon. But toward the time of parturition this part of the canal becomes constricted for about two-thirds of its length, the rest retaining its normal size; and so that peculiar conformation is established which we find at last in man and one of the highest species of the *Quadrumana*, in whom it may be regarded as a rudiment of the tubular diverticulum which is found in the rest of the mammalia. In herbivorous mammalia the cecum often attains to the size of the large intestine. In such instances of development its capacious dimensions not only greatly favor liquefaction of the coarser ingested foods, but afford a broader surface for absorption.

Neither in man nor in any of his ancestors, however remotely in the past they may have lived, could such a development of the cecum have existed. Man, as descended from the *Monotremata*,[1] has developed along other and independent lines of progression. He never belonged to the class of *Quadrumana*. None of his progenitors has had at any period a foot that might be regarded as prehensile with an opposable great toe. Ever since the parent form underwent division from the common stem the various parts have become more and more highly specialized, and organs have been developed for the performance of particular functions. The reason why the wombat is an exception is no doubt because that animal feeds not on herbage, but on roots, which require for their digestion a less amount of intestinal tract.

Were we to entertain any doubt as to the ancestral origin or rightful possession of the appendix in man, reference to the structure of fishes would show that that class of animal life has for the most part numerous ceca in the intestine. These cecal pouches correspond most nearly to the appendix in man. From the general prevalence of cecal tubes now found in fishes there can scarcely be a doubt that such blind ducts did exist in the old Devonian fishes, the ancestors of the carboniferous amphibians, that were in turn the progenitors of the ancient *Sauria* and *Theriodontia*, from which came the parent of the *Monotremata*, the common stock of all mammiferous animals, as the various orders of living beings have been classified by Professor Haeckel.

My apology for going into the subject before us somewhat in detail is from the fact that much misapprehension, I fear, has sometimes prevailed respecting the life of mankind being in danger because he has in his organism the vermiform appendix.

Drummond, in his "Ascent of Man," while speaking of the relics of the human organism, says that

[1] By *Monotremata* is here meant one of the three classes of mammalia possessing a single cloaca, in which the terminal ducts of the genital, urinary and alimentary organs center. Eggs are laid by the female, like those of the bird and the lizard. The young are hatched or brought forth as are the offspring of feathered oviviparous vertebrate races generally, and are nourished by an aqueous exudation from the undeveloped rudimentary mammæ. One of the best types of the sub-class of this variety is that extraordinary animal, the duckbill—or Australian duck-mole—the *Platypus* of Dr. Shaw and the *Ornithorynchus*, as described by Geoffroy. The duck-mole here referred to is an aquatic mammal, first found in New Holland; its feet are webbed and it has a bill in many respects like that of a duck. Its eggs are hatched as are those of the fowl. Another sub-class of mammals embraced in the division of the *Monotremata* is the *Echidna hystrix*, known as the toothless oviviparous Australian porcupine ant-eater. In this class of mammals the young are brought forth by an egg which is hatched within the body of the mother and then excluded alive. The marsupial mammals are regarded also as non-placental; their young are brought forth at an early stage and are nourished by the secretion from small udders within the marsupial pouch. The other sub-class of mammalia is represented by the *Placentalia*, and it embraces man as well as other orders that have advanced in the scale beyond the *Monotremata* and the marsupialia. It may here be remarked that as man reached in his ascent the stage of the *Monotremata*, he was undoubtedly by the favoring influences of environment, rapidly developed, merged and transmuted without any connecting link, without having relation to the anthropoids, in the form, substantially, in which he now appears. I am not unaware that other animals besides those mentioned in the paper have the vermiform appendix. Kirk, in his "Handbook of Physiology," p. 358, makes mention of the appendix as existing in the rabbit, and says that the part consists largely of Peyer's glands. He also says it is to be noted that Peyer's patches are largest and most prominent in childhood and in young persons. In a late edition of "Gray's Anatomy" appears the statement that the appendix is first seen low down among the mammals in the marsupial group, as in the wombat. No sign of it again appears until the ichneumon and the hog are reached, but not then is it a proper appendix. It is next seen in lemurs and in the higher apes, as in the chimpanzee, ourang, gibbon and the gorilla. The same authority, however, holds to the popular view that the appendix in man is a functionless and dangerous structure. How different is this conception of the character of the appendix from that implied in the account which Piersol gives in his work on "Normal Histology," where it is stated that in the vermiform appendix of some animals, and in some cases also in man, the follicles form a continuous zone of adenoid tissue; that the lymphatic, lymphoid or adenoid tissue usually occurs as circumscribed masses known as lymphatic nodules or glands. The lymphatic tissue wherever found is composed of element, the connective tissue, the reticulum and the small round cells. These elements, the lymphoid or adenoid cells become the lymph corpuscles and the colorless blood-cells on their escape from the denser reticular tissue into the lymph-current and their subsequent entrance into the blood.

caution is required in affirming as to the inutility of any character, since its seeming uselessness may only mean that we do not know its importance. He classes the vermiform appendix of the cecum as a vestigial organ, and says that it is now not only of no use to man but it is a veritable "death-trap." He further remarks that in herbivorous animals this blind tube is very large, longer in some cases than the body itself, and is of great use in digestion. In man, he says that it is shrunken into the merest rudiment. He regards it as an easy receptacle for the lodgment of foreign bodies. Drummond quotes from Sutton, who says that the appendix is covered with peritoneum; that it possesses a muscular coat, and is lined with mucous membrane. In the early embryo it is equal in caliber to the rest of the bowel, but at a certain date it ceases to grow, pari passu, with it, and at the time of birth it appears as a thin tubular appendix to the cecum. In the newly born child it is often absolutely as long as in the full-grown man. This precocity, he remarks, is always an indication that the part was of great importance to the ancestors of the human species. It is to be regretted that the authority here cited has not told us in what ancestor of the human species the appendix was so important. Did the writer or the author mean to tell us that it was the understanding that the human species descended from herbivorous animals?

There can be no doubt that the cecal tubes, as already stated, were of considerable importance in the common parent form from the *Monotremata*. This we see as exemplified in the intestinal arrangement of the common fowl. So, too, there can hardly be any question that these structures were of advantage to the carboniferous reptile and to the Devonian fishes, but it may be seriously doubted whether this peculiar anatomic development was of any greater service to those ancestral types than to man, the latest and highest development of all. The precocity of development of an organ in the fetus does not seem to be always a sure indication that the part was of a greater importance to the ancestors than to the descendants, else we should be led to infer that the head and upper extremities, which in the fetus are often developed faster than the feet or lower portions of the body, were of much more use to the carboniferous reptile than to to man.

It has long since been recognized that the cecum has been the seat of inflammation and ulcerative perforation, frequently giving rise to peritonitis. Most of the inflammatory processes involving the appendix vermiformis were formerly ascribed to the presence of concretions, hardened feces, and to other insoluble bodies that had gained admission within the canal. Suppuration originating in the cellular tissue about the head of the cecum and in the vicinity of the appendix had also been observed. Rokitansky and others of the older pathologists had occasionally observed mishaps that had befallen the appendix. I am not aware, however, that such lesions were any more frequently observed than were defective states of development or morbid conditions appearing in other portions of the intestinal canal. From observations made in veterinary medicine, it appears that the herbivorous or mammiferous animals that have the lengthened cecum in place of the so-called "relic," evincing an analogue of conformation, are far from being exempt from dangerous attacks of intestinal inflammation.

According to some of the latest authorities, the cases of appendicitis in which foreign bodies are found are rare, consisting of only about 4 per cent., and though fecal concretions are observed in a greater proportion, the fact proves but little, seeing such matter is so often absent in the higher grades of inflammation of the appendix, and is so frequently met with in cases of autopsies of persons who have died from other diseases.

The main factors concerned in the causation of appendicitis must be attributed to the effect of mechanic injuries and to bacterial agency. The influence of the latter I need not discuss to any great length, but only wish to say that there must probably be a solution of the continuity of the normal structures of the appendix before micro-organisms can work pathologic change.

As already intimated, the appendix in the human subject is as seemingly well vitalized as are other portions of the organism. Its walls, as before stated, are firm; the part is covered with peritoneum. It has a muscular coat and is lined with a mucous membrane. The blood-supply is from a considerable artery—the ileocecal—and this in turn is given off from the superior mesenteric. It will be remembered that the epithelium of the appendix is of the columnar variety, containing solitary glands, which are really intestinal lymphatics, and are of the nature of the agminated glands or of those comprising Peyer's patches. These glands, when appearing as solitary bodies in the large intestine, are most numerous in the cecum and in the appendix vermiformis. They are without doubt largely connected with the important function of lymphosis and hematosis, for they are abundantly furnished with capillaries and lymphatic vessels; these form a plexus around the sacculi of the glands and thus present features akin to the lacteals. In portions of the intestine these glands are found closed, though at intervals they undoubtedly open to discharge their contained secretion. The solitary glands, as said before, are quite abundant in the cecum and the vermiform appendix; they are prominent on the surface and are perforated by a minute opening upon their free surface. Of late much attention has been paid to the nature and character of glandular tissue.

Poehl[2] discovered in the thyroid gland an organic principle he denominated "spermin." Other authorities claim that the thyroid gland secretes a product capable of overcoming toxic substances resulting from metamorphosis of tissue within the body. The elaboration of this material by the thyroid gland is essential to the proper development and preservation of the organism. The same healthful influence has been attributed to the glandular secretion of the thymus, the prostate, and to the ovaries. Undoubtedly all glandular secretions exercise a similar conserving energy on the parts of the body with which they are in immediate connection. The therapeutic effect of the thyroid extract, whose active principle was discovered by Bauman[3] and named by him "thyreoidin," is also suggestive of the importance of the function pertaining to glandular tissue. It has long been thought by some physiologists that the odorous matter of the excrement is due to the secretion of the appendix as well as to that of Peyer's glands. Rotch[4]

[2] Boston Medical and Surgical Journal, Vol. cxxxix, pp. 462-3.
[3] Journal of the American Medical Association, Vol. xxxi, p. 1299.
[4] Pediatrics, 1898.

under the head of "The Normal Development of the Appendix Vermiformis," attaches much importance to the lymphatic glands about the cecum as possible starting-points of inflammation. He quotes Tuffier as stating that the lymphatics of the front of the cecum follow the anterior ileocecal artery to empty into two glands which he has found constantly in the superior ileocecal fold, and which in the child are very distinct. The posterior glands are also found constantly on the posterior and inner wall of the cecum itself, beneath the peritoneum. They also form, he says, a group of from three to six glands.

In man, as in some of the higher *Quadrumana*, the lymph follicles in the vermiform appendix form a continuous zone of adenoid tissue. From this it would seem that there can be no question that, after inflammation has been set up in the glandular tissue about the cecum, involving to a considerable extent the appendix, the muscular tissue may become so swollen, relaxed, or weakened as to allow fecal substances to pass through its aperture from the cecum into the canal.

Catarrhal inflammation, as said before, can scarcely be considered a cause, for when that form of inflammation attacks the appendix it is usually the result of an extension of a morbid condition from the cecum or other portion of the intestinal canal. The extremes of age or the differences of sex fail, for the most part, to afford satisfactory evidence of causation, especially when we come to consider the countless number of persons of either of these classes escaping the consequences of such mishaps.

The more direct cause must then be sought in the effects of accidents, injuries, traumatism, mechanic disturbances, or from irritation from within, continued or repeated, whereby the parts become for the time being so devitalized as to favor the development of morbid processes through the agency of micro-organisms. The observation of Professor Rotch, already referred to, on the importance of the lymphatic glands about the cecum as starting points of inflammation of the vermiform appendix, should not be lost sight of. Another point that should be borne in mind is the fact that when, in cases of appendicitis demanding surgical treatment, the failure to find the appendix, or the omission to remove it because it is not within easy reach or because too much violence may result to other structures, will not always seriously interfere with the patients' recovery.

An interesting instance of inflammation of the vermiform appendix, the result of traumatism, occurred in the following case:

Case 1.—A woman, unmarried, aged 19 years. When I was called I found her in bed suffering from severe pain in the right hypogastric region and in the right iliac fossa. The patient had complained of chills and there had been febrile reaction. The temperature was moderately elevated, varying at different parts of the day from 100 to 101.5. The rigidity of the rectus muscle, as well as that of the abdominal parietes generally, was not excessive, though there was more tension of the parts on the right side and in the right iliac fossa than there was on the left side. The pain was not limited to any special point, but was diffused over the abdomen, as if originating from the superior mesenteric nerve centers and from points along the great sympathetic ganglia, about the region of the umbilicus. There had been nausea, but the vomiting was not distressing. A thickening or an exudation could be felt extending from the McBurney point outward toward the ileum. The patient for the next eight days, while under the influence of gentle laxatives, sedatives and hot fomentations, appeared to improve. After that she suddenly grew worse and presented characteristic symptoms of suppurative appendicitis.

It was at this time that I succeeded in obtaining from her the history of an injury. It appears that some three weeks before making my first visit, the patient, while crossing a street near Commonwealth Avenue in Boston, was struck by a rapidly-moving bicycle. She was thrown down; the force of the blow seems to have been imparted to the tissues on the lower portion of the abdomen and a little to the right of the median line and to the left of the right iliac fossa. The patient recovered herself, returned that day to Cambridge, and though suffering severely at the time, the accident, it is now strange to say, had so completely escaped her memory as not to be recalled by questions in reference to her receiving an injury to the parts near the seat of pain. There were no visible marks of a contusion or of any internal injury.

Next day, with the assistance of Drs. Currie and Cunningham, I made an incision over the point of the greatest tenderness, which was in the right linea semilunaris. The tissues about the head of the cecum were swollen and inflamed, affording evidence that suppurative processes had taken place. The appendix at its attachment to the posterior aspect of the cecum was sought for and was found unusually long, inflamed, stretched, adherent, extending to the right, where it had evidently been raised or displaced at the time of the accident, by the violence impinging upon the deeper structures of the iliac fossa, and by the morbid processes that had afterward ensued. After the excision of the appendix the cavity was irrigated with warm, sterilized water, and drainage was established by the use of iodoform gauze. Suppuration was finally overcome, chiefly by hot douches, and by the liberal use of peroxid of hydrogen.

Since then the patient has been in fair health. She has married and is now advancing toward the close of her first pregnancy.

Another case of appendicitis, the result of a blow from a rapidly-moving carriage wheel upon the parts about the cecum, occurred upward of a year ago.

Case 2.—A man, aged 34 years, whom I had the opportunity to see in consultation. Ten days after the accident an incision was made at the most prominent part of the swelling, which was embraced within the point of election for operation as recommended by McBurney. The structures about the cecum, containing the lymphatic glands and supplied by the ileocecal artery were involved in the suppurative processes. The appendix was red and swollen. The part was removed, and drainage, as in the other case, was maintained. After the lapse of some five weeks the patient had practically recovered.

I have reported these two cases because, as I believe, they were the direct result of traumatism, and the parts, injured as they were, became the immediate foci of infection.

These cases, taken in connection with other facts, suggest the thought that inflammation of the vermiform appendix is the result, as said before, for the most part, of mechanic disturbances, or of prolonged or repeated irritation whereby the tissues become devitalized and the neighboring lymphatics become originating points of the morbid process. It seems scarcely necessary to mention how such factors may arise; suffice it to say that the many occupations and trades can contribute to this result. There are numerous sources for giving rise to undue pressure, such as the result of habitually carrying articles of luggage, of wearing improperly fitting clothing, or of the habit of assuming unnatural or constrained positions of the body or of the lower extremities. Any or all of these may at first appear trifling, but when long indulged in, may serve to interfere in no small measure with the function of the vascular element and thus give rise to disease that may be transmitted to the cecal appendix.

Puerperal Infection.—A. de Pourtalès concludes, from a study of six fatal cases, that we must distinguish between primary septic phlebitis and secondary infection from a thrombus already formed at the placenta site. He found putrefaction bacteria with the streptococci in these decayed thrombi. In one case two months had passed without fever, when a streptococcus infected thrombus in the vena cruralis started a general septicemia.—*Archiv f. Gyn.*, Vol. lvii, No. 1.

OCULAR TENSION; PERIPHERALISM; FOREIGN CLINICS.

Read at the Twenty-fourth Annual Meeting of the Mississippi Valley Medical Association, held at Nashville, Tenn., Oct. 11-14, 1898.

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Much as it is to be regretted, there still remains much doubt concerning important etiologic and pathologic factors of intraocular tension, and notwithstanding certain pathologic conditions are pretty constantly found in glaucomatous affections, the problem is yet to be solved.

Glaucoma is of even more importance than "sympathetic" ophthalmitis,[1] because it appears to be little, if any, better understood, and still more on account of its far wider prevalence and equally fatal consequences to sight when uncontrolled. It is not my deliberate purpose to condemn unreservedly the conventional treatment, or to call any especial attention to the chaos that has always reigned in these branches of disease, nor to harbor any fancy or vain imaginations against the true spirit of science, to attempt the promulgation of a "complete system" by making "new knowledge" fit into the old; I will therefore endeavor to confine my remarks to some observations of clinical methods adopted by specialists engaged in ophthalmic work.

In 1856, Alfred Graefé, that bright spirit whose early death the scientific world has not yet ceased to mourn, announced to the world his great discovery that iridectomy appeared to be effectual in reducing intraocular tension by opening up the obstructed "filtrating angle" of the anterior chamber, re-establishing drainage. His attempts in this direction were followed by most brilliant results, but yet we are, forty-two years later, anxiously inquiring what is the essential nature of the glaucomatous processes, and what is the best remedy to employ. It would be foreign to my present purpose to pass any opinion on particular operative procedures; for are we not every now and then being led to propose and inculcate other superficial methods having the same end in view as that of iridectomy; proceeding too often upon some fanciful or speculative validity which experience has not sustained and which has hence fallen into well-merited disfavor? De Wecker[2] says: "Although I shall, probably, during the whole course of my career continue to give preference to excision of the iris as being the surest operation against glaucoma, I hold the conviction that our progressive science will substitute for it a simpler and more logical proceeding. . . . Under circumstances only do I recommend you to renounce iridectomy, and to resort to my procedure; first, when you recognize that you are dealing with hemorrhagic glaucoma, for here the double section with the narrow sclerotome (2 mm.), enables you to avoid the danger of the section for iridectomy; and secondly, in cases of absolute glaucoma: in these operations being undertaken only with the object of freeing the patient from severe pain."

Is it not a fact that surgeons who make use of sclerotomy as a complete substitute for iridectomy frequently fail to establish anything like a permanent "filtrating scar," but on the other hand find painful cicatricial contraction with consequent intraocular tension as the result of the traumatism?

[1] Vide article by the writer in the Louisville Journal of Surgery and Medicine, July, 1898. "Oculo-neural Reflex Phenomena, Etc."
[2] Thérapeutique Oculaire, Part i, p. 378, 1878.

Galezowski of Paris and Knapp of New York, at whose immense clinics a large number of Polish Jews may always be found, stated to the writer that in their experience they find this nationality particularly prone to attacks of glaucoma. When we take into consideration its environments and the eccentric character of these people, who barely at the best "eke out a miserable existence," crowded together during daylight in "sweater's dens," and at night time in ill-ventilated rooms and cellars of unsanitary tenement houses, the absence of anything like bodily cleanliness, partaking of an unwholesome food-supply, is it surprising to find these people so often the victims of hereditary and acquired diseases resulting from mechanic obstruction in the portal and general circulatory apparatus, the "shutting up" of the filtrating avenues from "pent-up" secretions in the emunctories of the body, to find them the subjects of glaucoma?

In cases of glaucoma can we look for a "cure" by the mere mechanic "opening up" of a filtrating avenue in an organ of the body without calling to our aid certain well-known therapeutic measures for the re-establishment of general systemic drainage? We should take heed that we do not hinder nature by the *nimia diligentia chirurgorum*, but only lend it tender and judicious help by suitable therapeusis, instead of attempting to create "new avenues" which may favor the access of micro-organisms through external artificial openings, or in the establishment of secondary glaucomatous manifestations from cicatricial contractions, and incarceration of fibers of the irides in the "surgical" wound.

As it is the province of the healthy nervous system to generate, to store, to regulate healthy nervous force, so it is the province of the various organs of the body to provide for ever producing, removing and reproducing just so much "secretion" as suffices to secure the smooth action, but never, so far as we know, destroying the material out of which the secretions are elaborated. By secretions we mean certain conditions and material appertaining to the healthy action of the part—continually recurring and as constantly passing away again; by excretion the final separation and ejection of material whose future utility is destroyed, and where retention, like the secretions in the body, would become the cause of danger and distress unless their evacuation can be secured. Over certain of the processes and proceedings of excretion we have often, fortunately, greater control than we have over those of secretion, and our power to deal with them in the main is much more prompt and satisfactory. Often, I dare say, medicine and surgery alike are powerless for the timely withdrawal of imprisoned "secretions" either as the result of perverted physiologic action or of organic disease which may prove too active, and both are finally compelled to lay down their arms.

A most important duty of the practitioner is the early recognition of the specificity of disease, and to ascertain what in the habits and surroundings of the patient is the cause thereof, and direct the treatment accordingly. The value of the various aids in the diagnosis of disease, such as the ophthalmoscope, and the importance of correct interpretation of symptoms of structural and functional pathologic metamorphoses throughout the body can not be overestimated, nor can too much emphasis be placed upon the disadvantages of excessive peripheralism in specialism.

There are few, if any, special departments of practice which have so indisputable a *raison d'être* as ophthalmic surgery; but there are few diseases which afford so many striking illustrations of the close relationship between various tissues and organs upon remote and often general constitutional states as those which affect the eye. Thus, in one case, impaired vision may be seen to be caused by degeneration of the retina, the result of Bright's disease of the kidney; in another blindness may result from mechanic obstruction of a retinal artery, by a small blood-clot detached from a diseased valve of the heart; while in yet another, loss of sight may be due to degeneration of the nerve of vision, consequent on the growth of a tumor in the brain; alterations in the quality and quantity, and blood pressure, the presence of various cast-off products of bodily tissue metamorphosis, all present pronounced appearances in the circulatory apparatus of the eye. Thus, an oculist who is unacquainted with diseases of the kidney, heart, brain and spinal cord, and other organs, with their ultimate relations to the sensorium, would often fail to interpret the ocular lesions with which he had to deal. Again the laryngoscope has shown that while in the one case loss or impairment of voice may be due to some disease within the larynx, in another it may be caused by an aneurysm or other tumor in the neck, or within the chest, pressing upon the nerve that supplies the organ of voice; while in yet another case, the laryngeal trouble is traceable to disease within the brain or spinal cord. These and other like facts show that between the various organs and functions of the body there exists—both in health and disease—a correlation, the recognition of which is of the highest importance; so the pathologist, relying upon the laws of physiology, which, although modified, are not suspended by disease, has learned that a disease commencing in one organ may involve wide-spread structural changes in many other parts. It is obvious, then, that the body can not be separated into different parts, so as to make one of them the exclusive object of study and practice. A mere ophthalmoscopist or laryngoscopist, whose vision is limited to the eye or the larynx, would be incompetent to deal successfully with those organs. Is it unreasonable to assume that many of the failures are due to some *favorite* (mechanic) method of attacking the glaucoma, to the complete ignoring of constitutional disturbances from which glaucomatous subjects are said to especially suffer, to favor suitable "agents for promoting constructive metamorphosis" or "agents promoting destructive metamorphosis?

Memoranda from noted clinics.—A visitor at the clinics presided over by some of the distinguished ophthalmic surgeons in London or Paris may witness from five to twenty or more operations which are performed daily at separate clinics. At the Hôtel Dieu, Paris, Dr. Panas on one occasion operated upon six cataractous patients, successfully accomplishing his work in one hour. The patients to be operated upon are put under antiseptic treatment, viz., a jet of sublimate solution is directed upon the globe of the eye, the conjunctiva being cleansed, and especial attention being paid to the eyelashes. The instruments to be used are held over the flame of a spirit lamp before being returned to their bath of alcohol, boric acid or carbolized water.

In cataract extraction the "small flap" is generally adopted, the operators using a thin, narrow-bladed knife—De Wecker's cataract knife—in the performance. The advantage claimed for this knife is that any sudden gush of aqueous humor is reduced to the minimum. Usually the section takes about one-third of the whole circumference; the wound is shaped according to the size of the cataract. The lens is removed from its capsule through an undilated pupil. There are cases of extraction where iridectomy is combined: 1, on account of glaucomatous tension, where the iris can not be reduced in spite of moderate efforts; 2, if the patient is nervous and restless during the operation and likely to continue so after it; 3, if, on account of non-maturity, the cortical masses can not be evacuated. Great care is taken in the removal of the lens débris; prolonged manipulations, however, are looked upon as hurtful and dangerous, as a bubble of air or cataractous matter is usually absorbed, and rarely in their cases give rise to inflamtory trouble.

Should a prolapse of the iris occur, and not readily disappear after slight friction, further manipulations through the closed eyelids, or by means of the curette upon the globe direct, are practiced. I noticed in several instances a replacement of the prolapsed iris, by an ingeniously devised instrument which I shall endeavor to describe. Imagine a hollow glass cone, the base being formed by an elastic membrane, and the apex being fitted with a small canula, very thin and flattened at its free end. The whole instrument has a diameter (base to apex) of about an inch, and the small canula attached to it is of the thickness of an average hypodermic needle. A little pressure on the elastic membrane having forced out the greater portion of the air, the end of the canula being placed in a weak antiseptic solution (usually $HgCl_2$), an interruption of that pressure causes the liquid to enter. It was observed that in a case of partial prolapse of the iris, a little jet or stream of the solution readily replaces the iris, thus avoiding all injury from direct instrumental interference. It is claimed that with careful antiseptic precautions they do not hesitate to operate upon patients suffering from diabetes or Bright's disease, which, in their experience, proves no contraindication. Some surgeons advocate the removal of the lens in its capsule on the ground that by so doing no secondary (capsulotomy) operation is required, and the attendant risks of setting up irritation from retained lens débris is avoided.

An interesting complication arose in the extraction of a cataract, viz.: As soon as the counterpuncture was made it was observed that the iris was bulging over the edge of the knife; the operator demonstrated how this difficulty could be overcome, by simply elevating or lifting the knife away from the plane of the iris before completing the incision—this was done without cutting the iris.

The writer witnessed a number of lens extractions within its capsule by MacNamara and Power of London without an iridectomy; they use a large triangular keratome; making a large incision just within the the margins of the cornea on the outer side. A scoop is then inserted through the wound as far as the outer edge of the pupil; the handle is then elevated so as to bring the lower end into contact with the capsule of the lens. The scoop is then slightly withdrawn, keeping its extremity on the lens, but so as to enlarge the pupillary opening sufficiently for pressure to be made on the edges of the lens, with the rounded extremity of the scoop, which causes the

lens to tilt (somersault) over and the scoop is thrust inward, under the lens, and is withdrawn through the pupil and through the wound.

Glaucoma is combated with iridectomy, sclerotomy, cicatricotomy, equatorial puncture, and galvanocauterization. The first three well-known operations need not be described here. I have heard it stated that in cases of great tension it is considered dangerous to open the aqueous chamber of the eye. In performing equatorial puncture, cocain is instilled in sufficient quantity to produce local anesthesia; a fixation forceps is used to rotate the eyeball upward so that the inferior part of the equator bulbæ presents. A narrow-bladed knife is then quickly plunged through the tunics of the eye in such a way that its point is directed against the geometric center of the vitreous; the knife is quickly withdrawn with a rotatory movement, and the eye bandaged. It was observed that no escape of vitreous followed the puncture. By this procedure it is thought that a filtrating cicatrix is formed, permitting of a certain amount of drainage—which most certainly in this case relieved the great tension and consequent intense pain.

Galvanocautery is employed for the purpose of obtaining similar, though milder, results to that of equatorial puncture, and is carried out in the following manner: the eye is rotated so as to expose the tissues of the sclerotica; the two points of the cautery are made to touch that tunic in from three to six places, according to the effect desired. A bandage completes the operation. De Wecker has obtained brilliant results following the two operative procedures adverted to, in cases of certain intraocular disturbances, in hemorrhagic glaucoma, with partial detachment of the retina, and in cases of incomplete detachment of the retina from subretinal effusion. Eserin is greatly relied upon for relieving intraocular tension; pilocarpin is substituted when eserin appears to cause irritation.

Stretching of the optic nerve and incision of its sheath for the relief of certain painful affections of the eye is practiced by De Wecker, to whose courtesy the writer is indebted for the honor of an invitation to witness his method of operating. Stretching of the optic nerve is, I believe, alone practiced by De Wecker, and is carried out in the following manner: the blind eye (devoid of vision) was rotated toward the temporal side; a conjunctival incision was made near the insertion of the internal rectus, the tendon of the muscle divided, and the capsule opened and freely loosened. The instrument for stretching—resembling a diminutive pair of obstetric forceps—was introduced, so that the little blade or hook at its extremity encircled the optic nerve; the other blade or branch was also introduced, when the two were closed, the optic nerve resting in the concavity formed by the two blades. A slight listing motion of the eyeball by the aid of forceps completed the operation, the blades being singly withdrawn. It was observed that the operation left no other appearance than that usually met with in an ordinary tenotomy, except that the pupil remained dilated. The operation was performed under antisepsis and cocain. An almost instantaneous relief from a persistent "neuralgia" followed this operation.

The subjoined paragraphs refer to a case of glaucoma reported by the writer to the Kentucky State Medical Society, April, 1877.[1]

[1] Vide Kentucky State Medical Society Transactions, April, 1877.

On Jan. 12, 1877, Mrs. H. P., 35 years old, consulted me for the relief of a gradually increasing defect of vision, which she said had been troublesome for the past two years. The pupils in both eyes were displaced downward (anterior synechiæ), the pupillary margins being adherent to the corneo-scleral juncture, the result of an awkwardly performed iridodesis—an operation that never was approved by the regular profession—by some experimental surgeon anxious to extend his ophthalmic experience. Prior to the performance of this operation she had no other trouble except the optical defect (hypermetropia); since that time she had gradual increase of pain in the eyes, with increasing contraction in the field of vision. She saw parts of objects only, and had occasional attacks of headache.

Examination (ophthalmoscopic) revealed atrophic spots in the choroid, of variable size and shape throughout the whole of the left fundus, with dark-colored striæ floating in the vitreous. The disc was deeply excavated, with the remains of an old blood clot lying upon the superior temporal margin. Tension, + 2; vision, perception of light only; right eye: tension + 1; vision, can see fingers at eight inches. Disc cupped, retinal veins greatly engorged and very tortuous. Peripheral choroidal atrophy in spots. Aqueous chambers of both eyes narrowed and very shallow.

Chloroform was administered by Prof. Dudley S. Reynolds (before whose clinic at the Hospital College of Medicine this patient was brought), and I removed about one-sixth of the irides through interscleral sections. A two grain solution of atropia, eserin at this time not having attained its present popularity, was instilled, and the eyes closed with the cold, wet compressive bandage.

On the 14th I visited the patient and found her suffering intense pain in the brows, quick pulse, dry tongue, no appetite, bowels constipated. I gave her ten grains each of calomel and chlorate of potash, which operated freely in four hours. At "bedtime" she took twenty grains of quinin. On the 15th, at 8:30 A.M., I was gratified to find the patient quite comfortable. The bandages being removed, the wounds were found well united, and the eyes apparently free from irritation. She remained indoors until the 20th, when she could count fingers with the left eye, and with the right she was able to see as well as she remembered ever to have done before. She now performs all the duties of her household.

This case is one of great importance in a clinical sense, as tending to show the dangers of anterior synechia and the value of iridectomy.

Anterior synechia is especially liable to develop tension in the eyes, which, regardless of its pathology, should lead to the most right examination of the state of refraction, and the symmetry of the peripheral portions of the field of vision. If the refraction changes from time to time, with the accommodation fully suspended, or the field of vision contracted at any point, tension being present, iridectomy should be performed at once. The physical signs of glaucoma should alone guide the surgeon.

I have recited this case to attract attention to the methods adopted as well as some of the views held by ophthalmic surgeons of an earlier period, as tending to show that the physiologic discernments and pathologic ascertainments of glaucoma at this time are but little, if any, in advance of that "set forth" by writers in the '70s.

A DAY IN THE COUNTRY WITH A GENERAL PRACTITIONER.

Read before the Western Surgical and Gynecological Association, at Omaha, Neb., Dec. 28, 1898.

BY GEORGE C. HIGHSMITH, M.D.

CARROLLTON, MO.

I believe it is often an advantage to the general practitioner to occasionally visit his professional brethren and observe how they do things. This is especially true of the country, where doctors have not the opportunity of meeting each other at the hospitals and colleges, and where societies have their meetings few and far between.

Some time ago, feeling the need of a little recreation after passing through an epidemic of typhoid fever, I concluded to pay a long-promised visit to an old friend who lived in a comfortable town of about 6000

inhabitants about thirty miles distant. I had not seen him since we were at school together, except occasionally at the State Association or some other medical society, and knew nothing of his affairs, except that I had heard through mutual friends that he was popular in his neighborhood and was doing a good practice.

I gave no notice of my intended visit, because you all know how often it happens when we have made arrangements for a little recreation or a run from home for a day, some very dear friend is taken suddenly ill or some wealthy or influential family demands our services.

I arrived about 7:00 A.M. of a beautiful October day. I observed on approaching the residence that it was a neat one-story frame cottage, with a well-kept lawn and a variety of forest trees in front, and a nice little barn in the rear. On the south side of the barn was a lot, in which was a well-fed Jersey cow and the essential accessories of pigs and chickens, and beyond this a small orchard. The doctor answered my ring himself. Before he appeared, however, I had time to note the soft chime-like sound of the door-bell, and to wonder why any one should have a rasping, clanging, disagreeably sounding instrument of torture attached to his front door. When he did appear I observed that he had a towel about his neck, that one side of his face was newly shaven and the other side covered with lather.

I was shown into a comfortable library, where a soft coal fire sent a cheerful blaze upward from a grate. My host continued his shaving, explaining that he was compelled to be his own barber; first, because he had no time to wait in a barber shop, and next, because he preferred to do his own shaving, on account of the danger from being infected by the hands and instruments of the barber.

When the doctor had finished his toilet, I was conducted to the breakfast room and introduced to his wife and three-year-old baby boy. I observed that his wife appeared to be healthy and intelligent, was neatly dressed, and I should guess was about five years younger than her husband. The baby boy was all right—fat, clean and apparently good-natured.

The breakfast consisted of home-grown fall pippins, hot biscuit, hot coffee with genuine Jersey cream, poached eggs, home-made Jersey butter, home-made peach preserves, and topped off if you wished with a glass of fresh, cool Jersey milk. When we had finished breakfast, after giving the doctor to understand that his fame as a successful practitioner had reached my neighborhood, that I was anxious to see how he did things, and that I would feel grieved if he allowed me to interfere with the routine of his business, he ordered his man to "bring Maud around."

"Some country doctors look after their horses themselves," he said. "I do not think it is a proper thing to do even if they have the time. In the first place, I do not think any one has a right to carry a 'horsey' smell into the sick-room, and then in the next place, we country doctors have to look after all sorts of cases, and the dust, which it would be almost impossible to get entirely rid of after grooming your horse, is liable to contain all sorts of microbes. I keep a man who looks after the horses and cow, feeds the pigs and chickens, keeps up the fires, cleans the operating room at my office, sterilizes my instruments, rolls bandages, etc. Maud is our single driver," said he, referring to the animal which was just then brought around from the stable. "I use her before noon about town, and my wife drives her in the afternoon. I do my work in town in the morning, as a rule, and attend to my country customers in the afternoon. I stay in my office when I can until 10 A.M. When the weather is fine my wife and baby often go with me to the country in the afternoon, in which case we drive the double team. Yes, she's a good mare," he said, in reply to 'a remark from me in reference to his single driver; "it pays a doctor to keep good horses. I have a pair of dandies in the stable; we will try them this afternoon."

When we had driven about three blocks we pulled up in front of a neat old-fashioned residence. "You may hold the horse while I go in a minute," said the doctor. After a few minutes' absence he returned, remarking as he took the lines, "she's alive yet. She is past ninety years old, and has been my steadfast friend for more than twenty of them. You remember good old Dr. Maughs used to say that the young doctor should not despise the advice of old women. This old lady was present at my first case of labor and showed me in the kindest and most delicate manner possible how old Dr. Smoothly always dressed the cord. Dr. Smoothly had died about three weeks before I located in town, after practicing in the community for more than forty years. I had taken his office and hoped to succeed to a large share of his practice. I had heard that the old lady was the mother of nine children who were all married and lived with their families either in town or the immediate vicinity. Of course, I could not afford to ignore her influence, and was extremely anxious to make a favorable impression. You remember that twenty-five years ago, as a rule, students were graduated without ever having seen a case of labor, consequently you can appreciate the value to me of the friendship of one so rich in experience as this old lady must have been.

"I remember our first conversation as if it were yesterday. It was early in May and immediately after the completion of the case of labor referred to; we two had retired to a back porch to rest and cool off. A clump of purple lilacs grew near, and the breeze came laden with their perfume and the hum of bees from a garden a little beyond. After congratulating me on the successful termination of the case, and expressing the opinion that I was going to be handy in the management of such affairs, she said: 'I think a young doctor should be careful to start right. He should be cleanly in his habits, polite and genteel in his manners, and should have a good stock of forbearance. Some persons who are not very fastidious when they are well are extremely sensitive and exacting when they are sick.' I call to see her every day," the doctor continued, "but do not give her any medicine. Her family are sensible people and are willing to leave it all to me as to whether I can prolong her life or make her more comfortable by giving her medicine. She has grown exceedingly childish and complains of being neglected if she does not see me every day. I call, speak to her kindly, push back her hair and lay my hand on her forehead for a moment—that is all, and it satisfies her. I think we are often not sufficiently considerate of those who are feeble both in mind and body. In the hurry and bustle incident to a busy life we are apt to be cold and unsympathetic toward those who are no longer able to assist us by their advice and influence. I expect to see crape on the door in the morning."

We had now reached the office. The door was open, the office was clean and everything in apparent order. There were four rooms on the ground floor—one for reception, one for consultation, one for operation and one for drugs, splints, dressings, etc.

"A ground floor is especially desirable for a country doctor," he said, after showing me around; "the city practitioner can have an elevator by which his feeble patients and those who are injured or crippled can reach his office. I give a desk in my reception room to a real estate and insurance agent. This man keeps my books, makes collections, looks after the fires in winter, in fact, keeps everything in order except the operating room. That is looked after by my man at the house, under my supervision. You will observe that my operating room is covered by a single piece of linoleum. I have it scrubbed with a hot solution of bichlorid every time it becomes soiled. You may sit behind the screen in the consulting room if you wish. I will have no talk which you may not hear, and may call on you for assistance occasionally."

The first patient was a young lady from the country, with a note from her physician stating that she had been thrown from a wagon twelve days ago, that at first she thought her shoulder was only bruised, that she had called on him yesterday and he had found a dislocation of the head of the humerus into the axilla. The patient was placed upon the operating-chair. I administered chloroform, the doctor removed his shoe, placed his heel in the axilla, and grasping the wrist with one hand and just above the elbow with the other, he first lifted the arm away from the body, placed his heel firmly, brought the arm back toward the body, making a back and forth rotary motion and forcible extension at the same time, and the dislocation was reduced. We now put the arm in a sling, pinned the elbow to the waist-band of her dress and gave directions as to the manner of removing and putting on clothing and the necessity of fastening the elbow to the side at night. The patient was then removed to a cot behind a screen in another room, to recover from the anesthetic, with directions to return in a week.

The doctor said to me: "I would not be so particular in a case of this kind if the trouble had not gone so long without reducing. A re-dislocation could be very easily made, besides there is some danger from ankylosis. When she returns I will make passive motion, being careful to fix the scapula while so doing; the scapula being so movable, if you are not careful you will not move the head of the humerus at all in your manipulations."

The next was a lady who stated that she had a small pimple on the back of her neck, that a little pus had formed which she had removed, that a stinging, burning pain remained, that her neck was stiff and she felt feverish.

"A carbuncle coming," said the doctor after examining.

"Oh, my," exclaimed the patient, "I had one once and it nearly killed me."

"We'll nip this in the bud," said the doctor. "It will hurt like blazes for a few minutes, but you can stand it and that will be the end of it."

When she had retired, the doctor said: "I sprayed it with a little methyl chlorid and made a deep puncture with a sharp-pointed bistoury. I then put a few drops of pure carbolic acid down to the bottom with a sharp-nosed P.P. syringe, then scraped it out with a small, sharp curette, put in some more acid and scraped again, and so on until I had made a good-sized hole. I then filled the hole with antiseptic, applied a little gauze, over this a little gutta-percha tissue, and fastened all on with adhesive strips. She will return tomorrow and I will apply the acid and curette again, if necessary. I treat boils in the same way, and the amount of suffering I save in the course of a year can not be estimated."

The next was a robust, prosperous-looking farmer. He had received a transverse cut about two inches in length, about three inches above the ankle and a little to the inner side, eight weeks ago. The wound had refused to heal, and his family physician had sent him to my distinguished friend. On rolling up the pants we noticed that the dressing was quite wet. The patient's attention was called to it and he stated that it had been so from the first. Upon removing the dressing we found the wound filled by a pinkish-white substance which projected considerably above the edges. "What have we here?" said the doctor. "We will curette this out and see." After making a few swipes with the curette, "Eureka," he exclaimed, "quite an unusual condition. The tendon of the tibialis anticus has been partly severed and some of the fibers have been caught between the edges of the wound. That pinkish-white mass is material nature has thrown out in her efforts to repair the tendon." The wound was thoroughly cleansed and the fibers of the tendon placed where they belonged. "Now, the next thing," said the doctor, "is to close up this gap and bring the edges in apposition. It can not be done with an ordinary interrupted suture, because the skin here is very tense and the wound has been gaping for some time.

"I will introduce this needle, which is threaded with a large-size silkworm gut, about one-third the distance from this angle of the wound, pass it through the lower lip to the other side, through the other lip and out at a point opposite. I now fold a bit of gauze four thicknesses, about one-third as wide as the length of the wound, lay it so as to cover the middle third of the upper lip, pass the needle over, introduce it through the upper lip and out at a point opposite in the other. I now fold another bit of gauze in the same way as the first, and place it on the other lip opposite the first gauze. Now I will get you to press the edges together and hold them while I tie over the last gauze. Now it is nicely closed with something like a quill suture, but much better." The wound was then sprinkled with a powder composed of boric acid and acetanilid, some gauze placed over it and a roller bandage over all. "Do not remove this dressing, and come back in a week. Get here before 10 o'clock if you can," said the doctor.

The telephone rang. "A man at the wagon factory got his hand in a shaper, telephoned to know if I was in," said the doctor. "Son," to a boy loafing in front of the office, "take this pitcher to the hotel and tell Joe to send me some hot water." Then to me, "You see those gallon bottles with gauze tied over the top of the neck? That's cold sterilized water; I get my hot water at the hotel across the street." By this time the man from the factory had arrived in a buggy driven by one of his fellow-workmen. His hand was wrapped in bichlorid gauze. "I have them keep a supply of bichlorid gauze in the office at the factory," he said. "I get it for them and instruct them in case of an

injury to put nothing but gauze on the wound. The only good it does, perhaps, is to keep them from putting on some nasty old rag or handkerchief. Ah, I see, one little finger almost gone and the other fingers of that hand badly injured. Now, the first thing I do is to douche the wound with a hot solution of bichlorid. I do not attempt to clean it thoroughly now. I put bichlorid gauze snugly over the wounds while I thoroughly cleanse the rest of the hand and the arm half-way to the elbow, first removing the coat and whatever else is necessary. I use peroxid of hydrogen to remove the blood; that's all it's fit for, and it is first-class for that. After removing the blood I scrub thoroughly with soap and hot water, then shave, then douche with hot solution of bichlorid, then with alcohol. I now cover the part I have cleansed with gauze and go back to the wounds. The parts contiguous have been thoroughly cleansed and covered, so no dirt can get to the wound from there. I find I can save half the little finger and perhaps all the other fingers. I cut the bone with this pliers, which is made something like a pruning-hook. I trim the tags of skin and tissue with scissors, twist this artery, wash off the blood with peroxid, scrub with soap and hot water, shave the skin, wash with hot bichlorid, then with alcohol, put in a couple of silk sutures, and dust with bor-acetanilid powder. I now bandage each finger separately with gauze, envelop the whole hand with a couple of thicknesses of gauze, over this I apply cotton, and a roller bandage over all. He will return in three or four days, at which time I will be able to apply a dressing which need not be disturbed until he is well."

I again retired behind the screen. The next patient was a lady who said she had female disease.

"How do you know you have female disease?" said the doctor.

"Dr. Suavity told me so," she replied.

"I do not care what Dr. Suavity said; I want to hear what you know about it."

"Well, doctor, I have awful headaches and pain in my back and stomach, I have dizzy spells, a bad taste in my mouth, and a horrible breath. Sometimes my bowels are constipated and sometimes they are too loose, and when I lie down at night I have awful spells with my heart."

"How are your monthlies?" said the doctor.

"Oh, they are all right now. I always was regular until Dr. Suavity scraped out my womb; then I flowed too much and came around too often and had pains in the lower part of my bowels and had to stay in bed a long time. Dr. Suavity is an awful good doctor; he is just as kind as can be. I hated to quit him, but he did not seem to hit my case."

"Get up on this chair," said the doctor. After making a thorough examination of the abdominal and genital organs, the doctor said, "Let me listen at your heart. Now show me your tongue. Open your mouth a little wider, please. Ah, those teeth! You must go to the dentist and have your teeth attended to; you have not a sound tooth in your mouth. No wonder you have headaches, and pain in your back and stomach, and a bad taste, and your breath is horrible, and you have dizzy spells and your heart is irregular. Take this prescription to the druggist, have it filled and take according to directions. It will not cure you, but may do some good. When you get some new teeth come back and I will see what I can do for you. I can not cure you unless you get some new teeth."

When she had retired, the doctor said: "Nearly every tooth is broken off even with the gums, and pus is welling up around every stump. I am satisfied that there is the source of all her trouble. I gave her some elixir pepsin with a little hydrochloric acid dil. and a little tinct. nuc. vom. This adds one more to the large number of similar cases I see every year. I am disgusted with the multiplicity of would-be gynecologists. We have a large number all over the country, who are not out of their swaddling clothes, medically speaking, who pretend to make a specialty of female diseases. They fatten upon the eternal gullibility of the sex. Some of these doctors are knaves and some are fools. It is the habit of a great many practitioners, when they are not able to make a diagnosis, to say, 'female trouble.' I think I know of several cases where women have been hurried to their graves by having their wombs treated, when perhaps rest and hygienic surroundings was all they needed. A good many fall into my hands every year who are suffering from Bright's disease or incipient phthisis, who have had their wombs probed and scraped and douched for months, and the doctor could give no other reason than that he could find nothing else the matter. I often have more trouble in relieving the condition brought about by some meddlesome home-made gynecologist than I would have had in curing the original trouble."

Then came a telegram to go eighteen miles in the country to operate on a supposed case of appendicitis. The man was ordered to have the team ready at noon. "I do not have to get anything ready," said the doctor, "I keep this grip always packed, ready for any emergency. When I come home, my man, who has been with me for eighteen years, looks it over and repacks it ready for the next case, so I have nothing to do but take it up and go. It was now a quarter to twelve o'clock. We rushed home and partook of a hasty lunch which the doctor's good wife had ready on the table. At 12:15 we were on the road, in an easy-riding light buggy, drawn by a pair of as elegant roadsters as it was ever my good fortune to sit behind. I wish I could repeat all the conversation of this country doctor as we glided over the country. The day was pleasantly cool, the roads perfect, and the team needed no urging. We gave ourselves over to reminiscences, after that to speculation, and then to prophecy.

How few doctors are even a reasonable success. Of the more than one hundred who graduated in the same class with us less than twenty could be located. What were the agencies which compelled such a large percentage to abandon the profession? Is the percentage of failures in other professions as great? Of those who filled the chairs in the medical colleges how few remained. We wondered if those upon whom their mantles had fallen were as worthy; if they were looked upon by their students with the same worshipful admiration as those who held the boards before them. How short is life, and, if this is all, how unsatisfying!

My friend spoke of the future of medicine with hopeful enthusiasm. How much of promise there is in serum investigations, how much in sanitary science. "A' tip-toe I see the dawn of a bright tomorrow," he exclaimed. "I believe the day will come when physic will be literally thrown to the dogs; when we will be able, by the application of the great cosmic forces, such as light, heat and electricity, and by the proper ventilation of our houses, cleanly surroundings, regu-

lation of temperature and humidity, attention to personal cleanliness, food, clothing, etc., to obviate all diseases. I believe," he said, "the fact that we have to administer drugs at any time and for any condition is an acknowledgement of the poverty of our resources." He then went on to deplore the spirit of commercialism in the profession, how in many instances the fee was regarded as of more consequence than the good we hoped to accomplish. He spoke of the necessity for a higher conception of the office of the physician, the danger from a multiplying of specialties, that a physician should be a general practitioner a long time before he thought of going into a specialty. "Specialism has a tendency to make a young man narrow," he said. "Nearly all the fads which have arisen and fallen within the last ten years have been the result of so many would-be specialists among the young men; the physician should be a man of broad culture. Every physician should be an educator, a teacher, from whom should radiate knowledge which the laity need, knowledge which they can not obtain elsewhere, and which they will gladly receive."

But to get back to business. We arrived at our destination about 2 P.M. A very cursory examination confirmed the diagnosis of the family physician. It was clearly a case for operation.

The doctor soon had his instruments in a shallow zinc pan, which he had brought with him, boiling on top of the cooking stove, and his gauze, cotton, bandages, etc., in a similar pan in the oven to sterilize them by dry heat. A board about six feet long and fourteen inches wide was procured, out of which to improvise a table. This board was washed with bichlorid solution, and a folded sheet, which had been thoroughly heated in the oven of the cook stove, was placed on it. This was placed on top of two chairs and answered very well for a table. The family physician had brought one of his professional neighbors with him, so we had plenty to do the work.

We all prepared our hands, and the patient was chloroformed, stripped and placed on the table. Notwithstanding that the family physician had cleansed the field of operation before our arrival, it was again gone over with soap and hot water, hot bichlorid and alcohol. My friend was one of those who can talk and work at the same time. After getting his instruments in reach and his gauze sponges, hot from the cook oven, ready, he began: "I will make an incision over the most prominent point of the tumor, which in this case is McBurney's. I will make the incision so as to divide as few muscular fibers as possible, in order to lessen the danger from hernia as much as possible. One of you may hold the wound open with these retractors while the other sponges. You will observe that I use hot dry gauze for sponges. I have a dozen in this jar; they were placed there hot when we began the operation. There are a dozen more being sterilized in the cook oven. We have now reached the abdominal cavity, and find that the wall of the abscess, or tumor, if you please, is not adherent to the abdominal wall. I will stitch the abscess wall to the edges of the wound with a small catgut, making a continuous suture. I now sift some bor-acetanilid powder along the line of suture to obviate any danger from pus leaking through into the abdominal cavity when the abscess is opened. I now open the abscess, and you will observe quite a large quantity of very offensive pus is discharged. After washing my hands in a hot solution of bichlorid and then in alcohol, I introduce two fingers, but can find no appendix. I will not search for it in this case for fear of breaking through the abscess wall and doing the patient much harm. If I find the appendix floating in the pus I lift it out, but if I can not get it without breaking up adhesions, I let it go; I do not even wipe out the cavity. I used to try to make a clean operation, find the appendix and remove it, and clean out everything. I am satisfied that several patients who are now dead might have been saved if I had been more conservative. Unless you can operate before the formation of pus, say within forty-eight hours after the beginning of the attack, and before the inflammatory condition has reached its height, it is better to simply open the abscess and drain. The appendix may possibly slough off and come away, and nature may close up the opening from the cecum. In a certain number of cases, however, another operation will have to be done. I now introduce several strips of sterilized gauze, into the meshes of which I have incorporated some bor-acetanilid powder, placing one end of the bundle of strips down to the bottom of the cavity, and allowing the other ends to hang out of the wound. I do not use iodoform gauze, because this is just as good and has no odor. You will observe that I brought all my towels, which are plain gauze, with me, and that I thoroughly sterilized them in the oven of the cooking stove. I do not depend upon the sterilizing of the manufacturer, no matter what he may say on the label about its being sterilized and hermetically sealed. We will now place this large piece of gauze over the wound—a single thickness—and fasten it snugly so it will not wrinkle. I usually fasten the ends down with adhesive strips. I use the most loosely woven gauze I can get for this purpose, so the discharge will find no obstruction to pass through. I now place over the wound a large quantity of gauze cut in narrow strips. You will observe that I use plain sterilized gauze, into the meshes of which I incorporate some bor-acetanilid powder. I now place over this another large piece of single thickness gauze; over this cotton, which you see has come hot from the cook oven; over this a roller bandage.

"The patient can now be put to bed. Under no circumstances should a particle of food, drink, medicine, or anything else be allowed to enter the stomach for twenty-four hours, and for the next twenty-four hours only a little hot water in a teaspoon occasionally. A clean dressing should be applied every forty-eight hours, or oftener if necessary, as long as there is much discharge. You should be careful in removing and changing the dressings not to disturb in the least the gauze left in the wound for drainage. The skin about the wound may be wiped with a little sterilized gauze, or if there is any dried discharge, a little peroxid of hydrogen might be used to remove it from the skin, but under no circumstances put any peroxid in the cavity.

"If you have had no experience in this kind of case the very thing you think should be done is the very thing you must not do. You will want to move the stinking gauze from the cavity and put in some clean. This should not be disturbed in the least as long as it stinks. The edge of the wound and some parts of the inner surface of the cavity have become glued to the gauze, and if you should break this up you will have a raw surface which might absorb poison from the discharge. When the cavity is empty the smell will

disappear, granulations will spring up and the gauze will loosen and come away of its own accord. If some of the discharge should flow over the granulations it can do no harm, because a granulating surface will not absorb. Now this may not seem a very scientific way of doing these operations, but the patient will recover, and recovery is the measure of success."

It was now four o'clock. Our team had been watered and was at the gate. I could but admire the perfect training of the doctor's team. Although in a perfect tremor of delight at the prospect of starting they stood perfectly quiet until we were both fixed in the seat and the doctor gave the word. Then we glided away at a 2:40 gait.

"I trained them myself," said the doctor. "I recognize the fact that I am one of the lords of creation and have dominion by divine appointment. You observe how perfectly obedient they are. I could drive them under the falls of Niagara if there was a wagon track there. The man I bought them from has no other business than raising road horses; he breeds for soundness, form, speed, disposition and intelligence. If the same care was exercised in the selection of those who were to be fathers and mothers of children, what a vast improvement might be made in the human family in the course of a few generations.

"We will go home by another route; the distance is the same but the scenery is more varied. I know every landscape for twenty-five miles in every direction. Each scene reminds me of a stanza or a poem from one of my favorites—Robert Burns, Eugene Field or James Whitcomb Riley. The village behind us is 'Ayr'; that old church on the hill to the right is 'Alloway's Auld Haunted Kirk'; the bridge just ahead is where Tam O'Shanter's luckless Meg lost her caudo-equinus. 'Ayr gurgling kiss'd his pebbly shore.' This is the stream; a quarter of a mile ahead, where the road sweeps around that point of timber to the left is a grove of hawthorn, where Burns took his last farewell of Highland Mary. It is the only spot in all this country where the wild violets have a perfume[1]. Half a mile below this bridge is Riley's 'Old Swimmin' Hole.'

"What delicacy of touch and fineness of feeling we find in Burns, Field and Riley," said my friend, growing enthusiastic. What common-place folk, and what trifling incidents are woven into the warp and woof of their poetry, yet what intense interest we feel in them. Is it true that the way to the heart is through common-place and every-day affairs? Is that the secret of their power? While it may be true that the 'rarest fruit grows upon the topmost boughs,' it is no less true that,

> The sweetest flowers that are found
> Grow rather close upon the ground.

"We wonder at the art by which so much is made of so little. We seek, as if we tear open a flower to find from whence the perfume comes, for the secret by which in the midst of a smile the throat is made to fill and the eyes to swim.

> A tear-drop stands in either eye,
> And yet I can not tell thee why
> I'm pleased and yet I'm sad.

"Their poetry sweeps us along in a tide of simplicity, sweetness, humor and pathos, yet we feel the absolute fidelity of the picture."

But my story grows too long. I can not tell more. I will only add that if I ever saw a man who was perfectly content with his lot and in perfect harmony with his environments, my friend was one. Our team sped on and we reached home amid the glories of a gorgeous sunset. The doctor's wife had a good dinner—roast pork and apple sauce and the necessary concomitants. We had our appetites with us. After dinner we smoked and talked some more. Then a young lady neighbor came in and we finished the day with a rubber at whist.

I am aware that this is out of the usual style for a medical or surgical paper, but if I have been able to entertain you for one moment, or suggest one idea that will be of practical benefit to any one I am satisfied.

CHRONIC PHTHISIS.

A CASE TREATED WITH KOCH'S IMPROVED TUBERCULIN, ETC.

Read before the Eastern Medical Society, at New York City.

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The tuberculin used in the case here reported came in a vial of about 15 drops—one gram. The pharmacist who dispensed it, told me that this bottle was the first which arrived in this country, and was obtained only with the greatest difficulty, as a personal favor. The first trouble experienced was in preparing it for administration, since a complicated process was necessary in order to dilute the liquid sufficiently and properly. Fortunately, I am a chemist, and therefore succeeded in making a pint of solution, but would not advise anyone else to attempt it, as it requires a sterilized laboratory and apparatus to work with. I had several mishaps before finishing, principally on account of not having a suitable counter to work on. It is now furnished prepared, so that no further trouble ought to be experienced in that direction.

Although this patient had had no hemorrhages at any time, I have called it chronic phthisis, and not miliary tuberculosis, because the signs and symptoms were localized in the lungs. When first seen, he was unable to leave his bed, being in a very emaciated and weakened condition. Under the use of creosote he improved so far as to be able to get out of bed, to go around the room, and later to go down stairs and into the street. The subsequent history of the case is as follows:

A. G. Italian, aged 17 years, apparently had hip disease when a child. The right lower limb is so much shortened that he walks on the ball of the toes and he has to wear a specially made shoe on that foot. He lives in the front of and over a junk shop. April 9, 1897, he was found somewhat improved, having been treated up to this time, as before intimated, with 5-minim creosote pills, as well as with expectorants, etc. On this visit I told him to continue the pills, and also prescribed a one-grain calomel powder to be taken three times a day. His temperature was 98, his pulse 84. Previous to this his temperature had reached 101. On April 14, his temperature was 100.5, and he complained of rectal pain. I found on examination one intero external hemorrhoid, and ordered a 5-grain capsule of quinin sulphate t. i. d.

[1] About a mile north of the village of Coloma in Carroll County, Mo., is a bridge over a stream called "Tater Hill Creek." On the south side of this stream, to the left of the road just before crossing the bridge is where the wild violets have a perfume. I have examined every bed of violets in all that country, but could find no others with the faintest odor. I took a bunch home with me and transplanted them to my garden, but when they bloomed the next spring there was no perfume. I then went to the banks of Tater Hill Creek and the perfume was the same as a year ago. The particular bunch I transplanted may not have been of the odorous variety, or there may be something in the soil of that particular spot which invests them with the perfume. Who knows? I shall transplant some more next spring and try again.

April 21, I asked him when he had had a bath last. He said "I have not had a bath since I went in swimming last summer" —about eight months previous. His temperature on this occasion was 101.75. I ordered creosote to be continued, and a sponge bath of alcohol and water, equal parts, for ten minutes daily, also ten grains of quinin in 15-grain suppositories three times a day, and enemata when necessary. I told him to see that he had an evacuation every twenty-four hours. On May 5, I found his temperature to be 101, and ordered four creosote pills a day. He complained of the cough being severe and of having a chill every evening and morning. I ordered a mixture of codein, chlorid of ammonium and syrup of wild cherry, also two 5-grain quinin pills on arising and two at 4 P.M.

May 12, his temperature was 100.5; he had a hectic flush, and showed evidences of a perineal abscess just on the ischiorectal line. The skin was not reddened or swollen, but the part was very tender and boggy to the touch. I ordered poultices, and gave them the prescription for the tuberculosis antitoxin.

May 13. Roughly stated, two drops of the tuberculin were diluted to one pint with glycerinated salt water, and fifteen minims were injected on this occasion. The temperature before the injection was 99.5; after the injection 99.75. He had complained of pain all night from the anal abscess. One-twelfth grain of morphin sulphate was prescribed, to be repeated if necessary.

May 15, he gave these details about himself. He had slept on a fire-escape one night about eight months ago; later on, he was selling papers during a light snow-storm. He came home and began to cough; was treated for a bronchitis by a physician, in January; went twice, but had taken cough medicines previously without relief; used to cough without stopping for half an hour when he went to bed. For a couple of months, his previous physician had given him sometning which smelled like the creosote pills, ten drops three times a day, in a glass of milk. (This was probably guaiacol, in which I have no faith.) His temperature was 101.3 before tuberculin, 101.75 after.

May 17. Previous to giving him the third injection of fifteen minims, I found the following physical signs: Bronchial breathing over the left lung in front, almost cavernous over right lung in front, and the same over both lungs behind. On percussion, I found the note flat over the left apex, and over most of both lungs behind, and the cracked-pot sound over the right lower lobe behind. The temperature was 98+ before the injection, and 97.75 after; the cardiac beat was very weak at the wrist, but fair when auscultated over the region of the heart. The skin over the perineal or ischiorectal abscess was ham-colored and extended to and included the anal margin on the right side. He had taken the three last powders of morphin during the night; had one passage yesterday and one today; has had no chills since, but spells of perspiration. I opened the abscess with the aid of local anesthesia—ethyl chlorid and cocain—and evacuated a stinking abscess; then I irrigated and applied a wet dressing.

May 18. His temperature was 100.5. The abscess cavity was found to be very small. He has had a passage daily, but managed to keep the abscess clean. "I took only two creosote pills yesterday," he said, "because I felt weak over the stomach." These pills were not gelatin coated. I ordered carbolic acid, muslin bandages, iodoform gauze, absorbent cotton, iodoform and a fountain syringe before the operation, and use them daily for dressing the abscess.

May 19. He says that his mother was married sixteen years when he was born. He was the fourth child. Temperature before injection was 99.9, after injection 98.8, showing a decrease.[1]

May 23. Ordered a milk punch three times a day. The temperature on the 21st, had been 98.5 before and 99 after the injection. Today the thermometer showed 97.5 before, and 98.5 after; pulse 120; cough severe. Prescribed ammon. chlor. gr. 2½, mist. glyc. comp. ℥ ii, every four hours.

May 25. There is loud bronchial breathing over front of right chest below, and especially over upper lobe of left lung behind; cavernous breathing and flat percussion note over circumscribed area of left lung. (Forgot my thermometer.) Pulse weak and rapid.

May 27. His weight, he told me, was 88 pounds. Lower extremities showed these measurements: Circumference above knee, right, 6½ inches, left, 9½ inches. This evidently indicates that he had infantile paralysis at two years, and not hip disease, as previously supposed, although this is not conclusive. He felt chilly a few times this morning, between 7:30 and 9:00 A.M. Temperature 102.25 before, 102 after; perineum dressed as usual.

May 31. Temperature before injection was 101, 101.5 after. Nitrate of silver touched to abscess wound. Injected one-half dram tuberculin solution *from this time on*. Pulse 129. Ordered strychnin, 1/25 grain, wine pepsin, 1½ drams three times a day.

June 2. Temperature was 102.5 before, 103 after. Stopped creosote and ordered quin. sulph. 5 gr. t. i. d., and milk punch every four hours, and iodoform ointment as application to perineal wound.

June 4. Temperature before injection, 97.75; after, 98.25. Had only taken four capsules since; dulness over upper chest; voice and breathing diminished or absent at different places.

June 7. (Called on third day instead of second by mistake.) Stopped quinin and ordered creosote again. Temperature 97 before, 97.25 after; pulse 108, after injection 100. The pulse has been exceedingly weak during the whole illness.

June 9. Temperature before injection 99, after 99.75.

June 1, I quoted the above facts to the Medical Progress Society of the West Side German Dispensary, New York, during the discussion of which it was stated that I should not have increased the dose so rapidly. I gave as my reason for doing this, that the directions called for an increase up to 7680 times the original dose, and therefore a rapid increase seemed necessary, in order to reach the maximum dose at a reasonable time.

I abstract the principal notes from the red circular which accompanies the German tuberculin. As before stated, roughly speaking, 1½ minims, or two drops, are diluted with 13 ounces of water, in sterilizing apparatus, to which 36 grains of salt and 3 ounces of glycerin have been previously added, the whole being repeatedly filtered through sterilized filter paper until absolutely clear. The object of the glycerin is to preserve it, since each dilution lasts an unlimited length of time. The circular further states that the tuberculin must be kept in a cool, dark and dry place. The commencing dose is 15 minims of the dilution, unless a reaction appears, when it must be still further reduced. I made it a rule to take the temperature before and after each injection. If the temperature rose over half a degree, I gave 5 minims less at the next injection. If it remained the same or became lower, as frequently happened, I increased the dose five minims. Occasionally, however, five minims of an increase was found to be too much, so three minims were added instead. The circular goes on to say that carbolic acid solution and similar liquids are not permissible as diluents. The injections are made subcutaneously about every second day. "Any febrile symptom," the circular says, "caused by the injection, must have entirely disappeared before a fresh injection is made." Now, it is impossible to say always that a rise in the patient's temperature two days after the injection, was caused by the tuberculin. Therefore, my rule has been generally to ignore this, simply treating high temperature, weak pulse and cough symptomatically. Dr. Dessau asked at the discussion above referred to, why I used other remedies at the same time. The principal reason was because the tuberculin did not relieve the urgent symptoms, and this is what the family demanded. I believe, however, that the tuberculin did prolong the patient's life. "With doses of 5 milligrams,"—one-half bottle—"and upward," the circular goes on to say, "it is not advisable to make more than two injections within the week, and with still larger doses not more than one. As a rule, the dose is increased to 20 milligrams"—two bottles of undiluted tuberculin—"and if no reaction follows the injection of this dose, the treatment is discontinued or only repeated at long intervals. For injection,[2] any part of the body where large folds of skin can be

[1] I do not understand exactly what the decreases mean.

[2] This tuberculin corresponds to the "T. R." of Professor Koch.

raised may be used." I have found the buttocks about the most convenient place, as a rule, using the opposite sides in succession. The very finest "Green" needle obtainable should always be used for hypodermic syringes, and they should be made to screw on the larger aspirating syringes for the use of larger doses. Special syringes are not required. "The local reaction disappears generally within twenty-four hours. This evidently refers to the pain and swelling. The swelling generally disappears within a minute, as soon as the fluid is absorbed, and with a very fine needle, the pain is very trifling and only transient. I believe that it can not be too strongly emphasized, and teachers should take more pains to impress it upon students, that in giving *deep* injections, particular care should be taken to see that all air is excluded from the barrel of the syringe; fatalities are continually occurring through ignorance on this point.

It is generally advised to rub the swollen area with the finger. I do not believe in this: 1, because it is not necessary; 2, because it is apt to force out some of the injection again; and 3, because the puncture may be infected with the finger. "The usual antiseptic regulations are to be followed in preparing the needle and syringe." The skin also might be added. After use, I always work the syringe in some sewing machine (sperm) oil, to keep it in good condition. By doing this the syringe will need little more than an occasional leather washer or a needle. Physicians rarely take time to wash and disinfect their hands before giving a hypodermic injection.

June 11 I was informed that the patient had a chill at 4 P M. on the day that I gave him the last injection. This was given at 10 A.M. I found his temperature to be 101.75 before the present injection and 102.75 after. This was the greatest rise he had from the injection since the treatment. On percussion, the upper part of the chest behind was found to be flat, and on the right side the cracked-pot sound was heard. On auscultation the respiration was found to be diminished behind at the upper part, and in front on the left side. Bronchial breathing was present over the rest of the lungs. The pulse was too soft to be counted. (This occurred quite frequently.) He received 22 minims at this injection.

June 13. Temperature was 103.3 (always in the mouth); room very hot. After 15 minims his temperature remained stationary. I ordered 10 grains phenacetin t. i. d., and carbolic ointment for the perineal wound. Patient lives in two back rooms over a second-hand junk shop. In these two rooms there were living four males and two females, all grown but one. As there were only two beds to be seen, the question is how they managed to accommodate themselves.

June 15. I found the patient drinking beer and eating rye bread. He rarely or never receives the daily sponge bath which I have ordered. Milk punches he does not like, and without milk he says he can not take brandy. He does not understand that he can take it in water. Before injecting 10 m., temperature was 97.6; after, same.

June 17. Before injecting 20 minims, 102.3; after, 102.5. He says that the cough is severe, also that he ate cake, etc.; and that he took no medicine nor powders since. Pulse is uncountable. Punches ordered.

June 19. Before injection (25 minims by mistake instead of 20 minims), temperature was 101; three minutes later, temperature 101.5. Complained today of pain over left apex.

June 21. This patient is 17 years old. Find bronchial breathing over left chest both before and behind; over the right the breathing is almost absent both in front and behind. Pulse 120; temperature before injecting 20 minims 99.5. After one minute, 99.25, a fall of $\frac{1}{4}$ degree. After two minutes, the same.

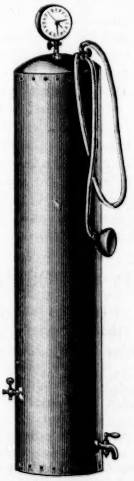
June 23. Bronchial breathing over both lungs in front, cavernous over middle of left lung behind; percussion unsatisfactory (patient so weak I did not wish to annoy him). Temperature 100 1 before injecting 25 minims. Before one minute, no change; after one minute, 99.5; after twenty minutes, the same.

June 25. Before injection temperature was 97.5; after injecting 30 minims it was 97.25. Very hot day. Had a red-hot fire, and patient was inhaling the vapors from a boiling wash six feet away from his bed, and was in a heavy perspiration.

June 27. Temperature before injection, 102; after injecting 25 minims, 102.6. He had chills this morning while sitting at the window; had difficulty in breathing and was very weak; pulse was 150. Ordered carbonate of ammonia and digitalis.

June 29. Temperature 100; coarse mucous râles all over the chest; pulse 120. After 30 minims tuberculin solution, temperature 99.75. Ordered to begin creosote pills again and take more brandy or whisky.

July 1. After reading an article on tuberculosis in a medical journal I was especially impressed by two facts: 1, that a great many people who are supposed to be free from tubercle are really tubercular in mild degree, and this coincides with my view; and 2, that the phthisical patient suffers as much from septicemia as from the tubercle itself. On the strength of this I decided to try the streptococcus antitoxin. I obtained Gibier's antitoxin, the directions on the vial being very brief, principally stating that in cases of septicemia or erysipelas two injections may be given immediately, and afterward one injection every six hours until improvement results. I decided to give my patient 30 minims for the first dose. This increased his temperature from 102.75 to 102.9. I followed this with 30 minims of tuberculin dilution, which raised it to 103. I then ordered, to be taken by the mouth, 5 drops of the tuberculin dilution three times a day, in water. His pulse before treatment was 144, after both injections, 145. His cough is "sticky,"



Compressed-air apparatus.

and the expectoration is half pus and half frothy saliva. The patient is very low and can hold out very little longer. The perineal abscess or fistula has been again discharging for two days.

July 3. At 2 P.M. his temperature was 103.5; after tuberculin, 103.6; pulse 156. Took no drops (tuberculin), but took digitalis. I ordered repeated syringing of abscess and more stimulant. He is so weak that he has to be carried from one bed to the other. The cough is very annoying.

July 5. Patient's sister said that he seemed to be very low last night and "could not get the catarrhs up." He ate bread and milk for yesterday's breakfast, and a pear between breakfast and dinner. He was sponged with alcohol and water about 12 o'clock. Ate another pear between dinner and supper. For dinner he had bread and milk, half a tomato and salad with olive oil. For supper he had rice boiled in meat soup. Took the drops once last evening before feeling bad, but was not feeling very well all day. Had wine and bread this morning, and a peach. He sleeps a little, on and off, during both day and night, but not long at a time. Temperature 99.75; after 15 minims streptococcus, 99.9; pulse 125. Ordered carbonate of ammonia, ipecac and elixir. The relatives paid no attention to directions.

July 7. Patient died at 6:30 this morning.

The case lasted about three months, and yet there is no evidence showing that Koch's improved antitoxin had any curative effect on this patient. If the cure requires a mild case to begin with, and good hygienic surroundings as an adjuvant, we can truly say that we have plenty of such cures under creosote, and even, for that matter, without it.

The other cases which I have put on this treatment do not furnish any useful data, since they previously improved just as much without it. During the whole treatment of the case described, I had not used one-fifth of the first two-dram-to-the-pint mixture. I should also add, that during the course of treatment some charitable people, instead of first asking my opinion about sending the patient to the country, offered to take him away, and then came to me later. This false hope made things a little disagreeable for me.

In order to carry out future investigations of this character more satisfactorily, it seems that our medical associations should assume control of several dispensaries and hospitals in various sections of the city, where at the same time the charity question could be properly supervised by the profession itself.

The tuberculin treatment has, apparently, no advantage over creosote, and has the disadvantage to the patient that it requires constant professional attendance, unless mouth administration can be substituted for the hypodermic needle. But this has hardly been yet determined. I tried it here to avoid two successive injections, not wishing to mix the two antitoxins.

Since writing this paper, the author has invented a compressed-air apparatus for tubercular cases, (See illustration.) Any person can use this at his own home, by attaching it to his water faucet.

SOCIETY PROCEEDINGS.

Chicago Society of Internal Medicine and Chicago Medical Society.

Joint Meeting held Jan. 25, 1899.

Dr. JOHN A. ROBISON, president of the Chicago Society of Internal Medicine, occupied the chair.

Dr. HENRY M. LYMAN addressed the meeting extemporaneously on

ACUTE ARTICULAR RHEUMATISM.

He gave an account of the disease as it used to be observed and as now seen, saying that there is a striking contrast between rheumatism as it presents itself clinically, modified by treatment of the present day, and what it was when he began the practice of medicine.

Rheumatism is supposed to be a microbic disease in which the nutrition of the body is modified by the action of microbes generating certain poisons or toxins that circulate with the fluids of the body and so far influence the nutrition of the tissues as to permit of the occurrence of the inflammatory symptoms—fever, pain, swelling and redness in certain definite territories, notably about the joints of the body. The joints of the lower extremities are involved more frequently than those of the upper extremities. The knee, perhaps more frequently than other joints, is subject to this swelling, and microbes are the supposed causes of this disease, but he is not certain, for he has many a time read the observations of notable students and microscopists describing particular microbes which they had discovered in the tissues of rheumatic patients, so that it is hardly orthodox to utter the possible belief that the microbes that generate these poisons are not of foreign origin, are not intruders from without the body, but are themselves constituent cells of the tissues of the body. He is not sure that this may not, sometimes at least, be the microbe that produces rheumatism. Certain it is, we find microbes in the tissues that are affected in a case of rheumatism. Certain it is, too, that these microbes are found in many diseases, such as yellow fever, measles, scarlatina, plague, and many other diseases which he believes are of microbic origin. While many observers describe microbes that produce poisons which occasion the disease, there is not yet that satisfactory unanimity of opinion among the profession as to so common and important a disease as rheumatism.

He drew a picture of rheumatism as he saw it forty and fifty years ago, when it was said to be less common in England than gout. It is a disease, however, that is common enough in all parts of the world. Even in the Arctic Ocean, during the thawing weather that occurs in the summer, Arctic navigators speak of rheumatism among the crews of their ships. However, in fair weather, in northern climates under the Arctic zone, rheumatism is not a common disease. This lends additional force to the hypothesis that rheumatism is one of those diseases of nutrition that is characterized by retardation of nutrition, by defective oxidation, for it is known that this retardation of nutrition and defective oxidation are most common in warm and damp climates. During dry and cold clear winter weather those processes are so much accelerated as to arrest many of the phenomena that are characteristic of rheumatism. However, rheumatism prevails in all parts of the world.

Usually the acute form begins with a chill, followed by a febrile movement, copious perspiration, frequently disturbance of the alimentary canal. Sometimes, as in all acute febrile diseases, the symptoms are ushered in with considerable disturbance of alimentation; even nausea and vomiting may occur. Intense pain is usually felt, sometimes diffuse at the first, then concentrating itself upon the knee joint or upon a number of joints. The joint rapidly swells; the skin over it becomes slightly reddened, and there is inflammatory edema. There is not that enlargement of the veins that is observed in gouty cases. In gout, which in many respects so closely resembles rheumatism, when a large joint is invaded, the swelling is the same as in rheumatism. The redness is greater; the veins which lead from the joint are dilated, frequently tortuous and enlarged, whereas in rheumatism this is not so conspicuous. Effusion takes place around and into the joint; there is considerable exudation. He recalls one case of rheumatism in which he made an exploratory incision and found that the tissues around the joint were occupied by a clear serous fluid without any appearance of turbidity or of suppuration, and without the visible presence of any leucocytes, excepting microscopically. It was simply a hyaline liquid exudation that occupied an area of space under the skin. It is stated on good authority that cases have been observed in which suppuration actually occurred. This, however, must be late in the course of the disease, and as a consequence of associated action of pyogenic germs upon the tissues that are thus affected.

In addition to the local disorder, there is great disturbance of the nervous system, great exaltation of the sensory processes, so that the pain experienced by the patient is much more severe than the ordinary pain from a luxation of a joint, from a bruise, or from an ordinary inflammation. This is one of the characteristics of the disease; as a consequence of the malnutrition of the patient his nervous centers and nervous apparatus are deteriorated in their character to such a degree that they react violently to all impressions that are calculated to give pain. The consequence is that a patient suffering from polyarthritis rheumatica will lie helpless and motionless, dreading the possibility of movement, and crying out even if you approach too near him. He has seen patients reduced to a condition of childish wailing by merely pointing the finger at an inflamed knee, it being so tender and sensitive that it could not be moved without excruciating agony. He has seen patients suffering from polyarticular inflammation in all the limbs lying in such helplessness that it required the aid of four strong men to lift the sheet or blanket upon which the patient was lying. To move the sufferer from one particular bed to another was almost an impossibility. The patients were bathed with perspiration, having that peculiar acid smell which was thought by many to be characteristic of rheumatism, and due to the poisonous acids that excited the rheumatism, on the theory that it was lactic or some other acid that produced the disease. It has been shown, however, that this is not a necessary phenomenon; that the presence of the offensive smelling acids is the result of lack of cleanliness, resulting in fermentation of sebaceous matter in the perspiration itself. Associated with the sebaceous matter of the skin, which is exuded upon the surface of the skin, decomposition gives rise to this peculiar odor, and if the skin is kept clean, so that there shall be nothing but perspiration, the perspiration is neutral in its reaction and devoid of unpleasant odor. Under these conditions patients may lie for a variable period of time.

In some cases he has seen inflammation attack a large joint, as the elbow or the knee-joint, and in the course of thirty-six hours, after having swelled to a very considerable degree, hav-

ing caused heat, redness and great pain in the joint, it would suddenly disappear, and there would be no transference of symptoms to any other part of the body; while in other cases there would be a transference from one joint to several in succession, traversing the different joints of the body, usually the larger joints, the smaller ones not being so commonly involved. In other instances, however, instead of a rapid disappearance of swelling, pain and exudation about a joint, the symptoms would linger day after day, week after week, sometimes locating in a single joint and remaining there, as in the shoulder, the elbow, the knee, or ankle-joint. He recalled to mind a case in which the shoulder joint thus inflamed remained so for three months, and was very painful and incapable of motion. The inflammation then disappeared, and the joint recovered perfectly. This is one of the pleasant things about rheumatic inflammation: no matter how severe the inflammation, how great the swelling, the pain or disablement of the patient temporarily, you may expect complete recovery in due course of time, unless improper interference with the joint has been allowed, as using the joint too soon.

Rheumatism is a self-limited disease; its duration is not far from three months. Those patients who suffer a long time are victims of chronic rheumatism. Usually, however, the disease lasts for three months.

In the treatment of the disease, physicians should be very cautious with regard to patients and not allow them,—even though they be quickly relieved and the swelling disappears rapidly from the joints that are implicated, to get upon their feet too soon, to walk far, or to use the joints before they have time to recover. Frequently the tissues that make up the joints are infiltrated long after the external swelling is gone. There is still some softening of the cartilaginous or superficial parts of the joints, where they move upon one another, and the joints are still sensitive. They should not be subjected to pressure and excessive movement before the lapse of three months. There is danger of induction of chronic rheumatism, in the first place. In the second place, there is danger of chronic thickening of the parts that make up the joints. Lastly, there is danger of permanent enfeeblement of the joint, and possibly a slight degree of superficial erosion that makes the joints sensitive and more liable to subsequent attacks. Such is the picture of rheumatism as it occurred in olden times when treated with alkalies.

Patients were treated in those days with large doses of alkaline salts; bicarbonate of potassium, citrate of potassium and liquor potassium were given on the hypothesis that there was an excess of acid in the blood and circulating fluids of the body, and by the administration of alkaline salts it was thought to be possible to neutralize the acid, to facilitate the elimination of acids through the medium of the urine and the skin, and thus to cure the patient. But, unfortunately, in many cases the disease was intractable; they continued to suffer week after week, and at last the disease would really get well, perhaps, in spite of treatment.

He recalled a notable event shortly after the Chicago fire. When on duty as attending physician in the Cook County Hospital, he read of the discovery of a new agent for the treatment of acute inflammatory rheumatism, called "salicylic acid." It was being reported, by German physicians, that it was an agent with remarkable and undoubted power to relieve the symptoms of acute articular rheumatism. After considerable time and effort, he succeeded in securing a quantity and prescribed it, certainly for the first time in any of the public hospitals of the city and the first time in his own practice. The effect was wonderful. In three days' time patients, who previously would lie weeks and weeks in a state of perspiration and suffering, requiring Dover's powders at night, were sufficiently relieved from pain to sleep. Opiates were withdrawn entirely. Under the influence of this remedy, in three days' time these patients would be out of bed, walking around, asking to be allowed to return home. But in a few days he found that the patients thus cured, and who went home, were back in the hospital again. Physicians had not then learned that it is necessary to continue treatment even after relief of the pain and disappearance of the swelling that affected the joints, one of the facts which goes to prove that the disease does not consist merely of a painful swelling; it is a disorganization of the joints of a more serious nature than mere local tenderness, and it is very essential to continue the administration of salicylic acid for two or three weeks after the relief of pain. It was not long before it was learned by experimentation that the salts of salicylic acid were even better and a more convenient means of medication than the salicylic acid itself.

Then it was not long before it was found that patients did not do as well with the salicylates prepared in this country as they did with those prepared in Germany. For a considerable time disagreeable results were had from using salicylate of sodium prepared in America. It was impure; it deteriorated with keeping; it did not produce the effects that were secured from the original German article.

One day he was called to see a young man suffering from acute articular rheumatism, and prescribed salicylate of sodium. The patient took it according to direction, and having taken it for two days, he went to the house on the morning of the third day of his illness, was met by the mother with an expression of horror, who said: "I was not aware that my son was such a boy; that he ever touched liquor of any kind; he has got delirium tremens"; and sure enough he presented the symptoms. There was delirium, picking of the clothes and tremor, all of the classic symptoms of the disease, but it was salicylate of sodium which had produced the effect. Withdrawing the drug and allowing its effects to pass off, the delirium disappeared, and the mother was intensely relieved. This is one of the ill effects from the use of impure salicylate of sodium in the treatment of acute articular rheumatism.

Dr. ARTHUR R. EDWARDS discussed the

CAUSATION AND SYMPTOMATOLOGY OF ACUTE ARTICULAR RHEUMATISM.

Bacteriologic arguments aside, acute articular rheumatism is an acute infection. Cold, heredity, age, trauma, etc., may be cited as etiologic factors, and yet they are proximate rather than ultimate causes. Guttmann and Sahli found staphylococcus. Sahli early questioned the unity of the disease, and is inclined to regard it as a modified pyemia. Several French observers have found bacteria not only in the joints, but in the blood and viscera. If all observers named the same bacteria, conclusions would be more easily drawn, but the finding of streptococci, staphylococci, diplococci, bacilli, etc., has led physicians to question their methods or their results. Singer likens the disease to pyemia, in that common symptoms occur in each, such as temperature, anemia, articular metastases, endocarditis, leucocytosis, peptonuria, etc. This author places particular stress upon the detection of pyogenic organisms in the rheumatic joints, in the initial angina, endocarditis, pneumonia, in various serous membranes involved, the erythema multiforme, etc., and calls attention to analogous changes in scarlatina, gonorrhea, typhoid, pneumonia, influenza, etc.

Whether the prodromes are indefinite or wholly absent; whether the initial symptoms are angina, albuminuria and fever, as Widal has often seen them, or enteric as often observed in Vienna, any diagnostic doubts are allayed by the appearance of polysynovitis. The fever is irregular, rarely high and in no way cyclic, as Friedlander would have it.

Œttinger states that the temperature is directly related to the intensity of the infection, the number of articulations involved, and to the development and progression of visceral and other complications. Chills suggest pyemic states. Kahler held that the fever could occur independently of joint changes. As Wunderlich noted in his celebrated original communication on fever, the temperature is usually highest when the patient is first examined. The joint affection itself needs no full description.

The subject of masked or atypic rheumatism dates from the writings of Immermann. He speaks of rheumatism masquerading under the guise of an endocarditis or trifacial neuralgia and yielding to salicylate treatment. Kahler's opinion of rheumatic fever without arthritis has been mentioned. The rheumatic virus, it is claimed, may produce pericarditis or endocarditis without articular inflammation, a "polyarthritis *sine arthritides*."

Complications occur as frequently in light as in severe cases, they vary with the existing epidemic, are observed most often near puberty, and are then most dangerous. Hospital statistics concern the severest cases. The most vital complications of rheumatism were first described by Pitcairn in 1788, while Pidoux, Besnier and Homolle followed Bouillard in developing the subject. Bouillard, in 1832, formulated his extensive studies practically as follows, viz.: That in every severe, generalized case of acute febrile rheumatism, endocarditis was the rule. At the present time many French writers hold the same views, e. g., Besnier. Widal writes that in such severe cases the "heart is diseased to some degree." Trousseau, the distinguished contemporary of Bouillard, considered the possibility of functional murmurs in the case of the systolic murmurs, all of which were considered as endocarditic by Bouillard. Potain, among the French, holds rather a solitary place, his views being those of the German writers. Granting that the teachings of the French school are extreme, we may long doubt in a concrete case whether a new bruit is hemic or endocarditic. Personally, Dr. Edwards finds the diagnosis in such instances far more complicated than is inferred from schematic text-book

teachings. Leube says, for example, that functional murmurs are rare in acute articular rheumatism, while they are frequent according to Senator. Hence, even in an acute heart murmur, its disappearance may be interpreted in two ways: 1, as the disappearance of a functional murmur when the fever falls, the heart slows, or the enema mends; or, 2, as the healing of a slight endocarditis.

Endocarditis is usually verrucose, rarely ulcerative, and not all instances of even fatal endocarditis in rheumatism are ulcerative. Endocarditis is more apt to occur when many joints are inflamed, but may antedate the arthritis. (Jaccoud, Trousseau and Martineaux.) Its frequency in Dr. Edwards' experience, is about the average figure given, 20 per cent. Other figures are 50 per cent. (Bouillard, Fuller, Latham); 20–28 per cent. (Bamberger, Jaccoud, Œttinger); 9 per cent. Wunderlich.

Osler states that rheumatism explains more cases of pericarditis than all other causes combined. It is the most frequent lesion in children. Its frequency is 20 per cent. (Hache, Wunderlich, Leudet, Sibson); 54–70 per cent. (Williams, Omesos, Taylor); 13 per cent., Œttinger.

Myocarditis occurs as embolic, or as extensive, by contiguity of tissue. It may cause sudden heart pain with weakness, and the subject dies—the "heart rheumatism" of the laity. Other cardiac occurrences are transient—palpitation and cardiac oppression, fugitive in character, and without cardiac findings, and tachycardia due to pain or physic excitement.

As a practical point, the right heart may be dilated, as it is in other fevers and in various abdominal affections, to disappear with convalescence. It may, when accompanied by a hemic murmur, induce the incautious clinician to diagnosticate endocarditis. The rapid, extreme and stubborn anemia of acute rheumatism is striking clinically and highly suggestive therapeutically.

As to the nervous system, it rarely affects the cerebrum, although Boerhaave and his pupil, Van Swieten, described undoubted cases.

The essayist has observed one case with recovery in which the subject had the *tempérament cérebrale* of the French, being mentally fatigued, but not an alcoholic. The patient was nervous, later almost maniac, exhibited great hyperesthesia, had one convulsion, a stiff neck, and then excitation was replaced by sopor and finally almost complete coma. There was no hyperpyrexia nor uremia. The symptoms were explained by toxic hyperemia.

In a second instance the spine was involved, and it may be stated, in passing, that a spinal cord rheumatism is unquestioned, being described fully by Ollivier, Ranvier, Besnier, Homolle, Vallin and Trousseau. The symptoms and pathologic findings were those of an acute meningomyelitis.

Psychopathy, in the aged, or indeed in others, has not fallen to his personal experience.

The respiratory tract is, next to the heart, most frequently complicated, and it is probably the most frequent atrium for the organism, an angina or bronchitis being the primary focus. French writers describe two forms of pulmonary complications: 1, the *forme pneumonique*, depicted by Besnier; Herzog and Hirsch also described the characters of the pneumonic form as fugitive, or migrating, pneumonia migrans, with pale face, much sweating, or even appearing before the arthritis; 2, the *forme œdemateuse*, observed by Houdet, and also described by Ball and Bernheim. The edema may be widely spread, resembling the acute pulmonary edema of Bright's disease, or it may be localized to one lobe or the bases. It may be quite latent, i. e., found only on physical examination. Personally, he has never seen either form.

In relation to the abdominal organs, nephritis is said to be infrequent. Personal experience has shown that the vast majority of cases of acute articular rheumatism have exhibited albuminuria or nephritis. The connection well deserves careful study.

Skin complications have been much discussed. The erythemata and subcutaneous nodes, he thinks, are rheumatic, while the purpuric eruptions are very questionably so.

The question of diagnosis depends upon the clinical course and the clinical type, modified very essentially by age. In children, generally speaking, the joints are less susceptible, while the skin, nervous system and heart are oftener involved. Heredity is most potent here, and the sexes are equally involved.

The various phases of rheumatism occur separately, now arthritis, at one time endocarditis, later chorea, then subcutaneous nodules, pericarditis, and so on.

The arthritis of children is less intense. The child rarely lies absolutely quiet, but tosses about; the tendons and fascia are more often involved than the joints, herein simulating talipes, etc. The pain is less; indeed, the objectively obvious arthritis may be overlooked. The lower temperature is particularly remarkable at this epoch. There is much less sweating. The anemia in childhood is especially conspicuous, being as rapid in development as that of diphtheria or adult malaria.

The endocarditis is not usually so clearly nor immediately connected with the polyarthritis as in adults, but develops more slowly, insidiously and later. It is twice as frequent as in adults; indeed, Sir Thomas Watson knew but three instances of acute rheumatism under puberty escaping heart disease. Endocarditis occurs relatively early in what Cheadle terms the "rheumatic progression," while pericarditis occurs later, after the valvular lesion has inaugurated hypertrophy and dilatation. It is almost always found (Sturges) in necropsies on valvular disease in children.

Rheumatic heart disease in general at this epoch leads to greater hypertrophy because of greater nutrition, to more marked dilatation, because of greater tissue elasticity; and for these reasons, as well as on account of its tendency to recur and the danger of overlooking the arthritis, the prognosis is much more cloudy than in adults. More marginate, papular and urticarial erythemata, and more purpura occur in children. The subcutaneous nodes of Barlow and Warner, the rheumatismus nodosus, give grave prognosis if large, and always suggest danger from serious intercurrent valvulitis.

Chorea is prone to develop with arthritis, heart disease, nodes, or with the erythemata. Frank rheumatism is easily recognized, while diagnosis in the masked or abortive is, in his judgment, always problematic.

Of the grave types, the visceral findings may confuse, but least so when secondary both in development and degree. Jaccoud speaks of the primary visceral type, wherein the findings, e. g., pulmonary or cardiac, antedate the arthritis, but here the diagnosis remains uncertain, awaiting the joint seizure.

The number of joints involved is always highly suggestive, but in no wise finally diagnostic. True rheumatism may be monarticular, and gonorrheal rheumatism is sometimes multiarticular. Diagnosis of gonorrheal rheumatism in women is often difficult, for notable reasons.

Bouchard and his clinic of assistants have especially elaborated the pseudo-rheumatisms, as the rheumatoid manifestations of scarlatina, diphtheria, syphilis, dysentery, typhoid, pneumonia, influenza, erysipelas, etc.

In women, puerperal infection, gonorrhea as stated, and an osteo-arthritis beginning acutely from exhaustion in pregnancy or lactation, may cause difficulty.

Pyemic disorders, osteomyelitis, glanders, etc., demand consideration in anomalous cases.

In children we review possibilities in the direction of acute pyemic monarticular arthritis, Barlow's disease, syphilis, hemophilic joints, if in the spine, meningitis or torticollis, and so on.

Subacute rheumatism gives by far the most trouble. Senator claimed that sodium salicylate is specific in true rheumatism and inert in pseudo-rheumatism. While acknowledging the general truth of his statement, yet its universal application is not justified. Salicylates are of greatest value in the arthritic type of *la grippe*, for example.

In direct reference to therapy, the salicylate treatment is the best. If not a genuine specific, an antirheumatic, it is a most effective antipyretic and analgesic in the vast majority of cases, and where other remedies have been employed after the failure of the salicylates to operate, it has been a question in the author's mind whether the other preparations were in themselves effective, or whether convalescence was not rather purely the natural solution of the disease. Possibly the cases upon which the salicylates are unsuccessfully employed are instances of pseudo-rheumatism. As a compromise with the adherents of the alkaline therapy, and as an adjuvant to this method, he uses the Vichy salts with some potassium citrate added. Despite theoretic objections, the best administration is by capsule, irritation by concentration being avoided by a glass of milk. The usual doses at the usual intervals are given till dulness, dyspnea or deafness begins to appear, when the dose and interval are changed. Following the analogy of cinchonism, he has used potassium bromid to lessen the tinnitus, etc., with good results. Salicylate delirium has been observed in anemic girls, in neurotics and alcoholics, but in his experience only in the latter class. Cardiac depression from the salicylates is observed usually only in largest dosage; if the heart becomes weak or irregular, he is always fearful of the intervention of an acute infectious myocarditis, and hence suspends salicylate treatment or guards the heart muscle by coffee, strychnia, or alcohol. In tender stomachs, or with idiosyncrasy to the drug, he employs it in enemata of peptonized milk. With antecedent or concomitant bronchitis, the lungs should be explored for possible congestion due to the remedy.

Caution is proper in old nephritics, yet infective albuminuria, directly due to the rheumatic virus, indicates rather than contraindicates salicylate therapeutics.

Dr. J. H. SALISBURY followed with a paper on the

CHEMIC THEORIES OF THE CAUSATION OF ACUTE RHEUMATISM.

He stated that the chemic theories regarding the origin of acute rheumatism have endeavored to explain the origin of this disease by attributing to it the action of an acid. The fact that lactic acid is a very frequent product of fermentation, and the discovery of the formation of sarcolactic acid by muscular metabolism, probably led to the selection of this acid as the morbid agent in this disease. At the time when this theory was first advanced it was thought that lactic acid was a very frequent constituent of the urine and other excretions. It was at one time supposed that as much as one-third of the solid constituents of the urine consisted of lactic acid salts. The causation of rheumatism by this substance was rendered much less probable by improved methods of investigation which showed that its presence in animal fluids was much less frequent than had been supposed, but the theory has shown great vitality and has been developed in various forms.

The lactic acid theory was first suggested by Prout, and has been advocated by Fuller, Todd, Richardson, Latham and others. According to this theory, lactic acid is generated in excess in the system of the rheumatic patient and causes the irritation of the joints, the fever, and the excretion of excessive acid urine and perspiration. The essayist thinks that the evidence for this theory ought to show: 1, that the blood or tissues of a rheumatic patient contain lactic acid; 2, that an abnormal amount of this substance is excreted; 3, that lactic acid is an irritant capable of producing the effects attributed to it.

In regard to the first item, observations have shown that the alkalinity of the blood is reduced. Bouchard quotes Lepine as having found the blood of a rheumatic patient neutral shortly before death, and Charcot as having found the pericardial fluid acid. He has himself obtained an acid reaction in the fluid from the joints of patients suffering with articular rheumatism. Evidence is lacking, however, to show the acid reaction is due to lactic acid. Salomon, who carefully tested the venous blood of six persons suffering from rheumatic fever, employing in each case as much as one or two cubic centimeters of the fluid, failed entirely to detect even a trace of that substance.

The excessive excretion of lactic acid is admitted by authors who deny that it is the cause of the disease. McClagan, who admits the excessive excretion of this acid by the perspiration, points out the fact that this excessive excretion continues after other phenomena of the disease have ceased, and hence concludes that the acid can not be the cause of the other symptoms. This reasoning seems, however, to be faulty, for the excessive excretion may be sufficient to keep the blood in a normal condition. Indeed, it is known that certain other conditions, as uremia, gout and diabetic coma, are brought about by a diminished excretion which loads the blood with the poisons that cause these morbid conditions.

While it is the common observation of clinicians that acid sweats are a frequent phenomenon in rheumatism, the experimental proof that the perspiration of these patients contains lactic acid is hardly sufficient.

The essayist then considered the evidence that lactic acid may cause the symptoms of rheumatism, and mentioned the experimental work of Richardson that has been frequently cited as proof of this action of lactic acid. In brief, we are without evidence upon which a positive statement can be made that lactic acid is the specific cause of rheumatism. The evidence that lactic acid is a predisposing cause of the disease is much more cogent.

That alkalies do not cure the disease is perhaps to be explained by the fact of the overproduction of acid, which it is impossible to overcome by the administration of safe doses of alkalies. The administration of alkalies provokes an excretion of alkali by the urine, leaving the blood only slightly more alkaline than before, and this excretion is probably affected so quickly that no great change is produced in the reaction of the inflamed joints.

Reference was made to the theory which attributes acute rheumatism to the action of uric acid, and the essayist quoted from the writings of Haig, Satterlee and others.

He also briefly considered those theories which refer the symptoms of rheumatism to the action of nitrogenous derivatives, either produced by the organism as waste products, or the result of the action of bacteria.

Money has advanced the idea that rheumatism is due to a toxic condition of the blood from an excess of fatigue products or elements resulting from nitrogenous tissue metabolism. The essayist thought that this theory rests merely on conjecture. The search for a specific micro-organism in this disease has so far been without satisfactory results. At the Congress for Internal Medicine, in Berlin, in June, 1897, Chvostek expressed the opinion that acute rheumatism could not be referred to the action of a specific organism, but must be regarded as the manifestation of the poisonous action of various toxins produced by various bacteria. He considered that the local action of bacteria would give rise to chronic inflammation and swelling, which would need surgical treatment. He considered that the term "rheumatism" would soon disappear from pathology. This view of the causation of the disease, in the opinion of the essayist, seems to be in accord with what is known of other diseases, such as diphtheria, Asiatic cholera, etc. According to this view, physicians must look for the production of the poison to the action of bacteria in other parts of the system, perhaps on the mucous membrane. Chvostek has suggested that the usual entrance of these toxins is the tonsils or the intestinal mucous membrane.

In conclusion, it seems to Dr. Salisbury possible to frame a hypothesis that will account for the phenomena of the disease upon the following facts: Marked reduction of the blood is markedly affected by the suppression of the acid secretion of the skin. This may easily be brought about by the chilling of the surface of the body, which is one of the exciting causes of acute rheumatism. The reduction of the alkalinity of the blood may also arise from the ingestion of acid-containing foods, or the absorption of the acid products of fermentation from the intestine. It may also arise from excessive or abnormal nitrogenous metabolism in the muscles or other organs. Reduction of the alkalinity of the blood tends to retard function of nutrition by lessening oxidation. In this connection, the essayist referred to the experiments of Dr. Loeb of the University of Chicago, who found the development of invertebrate larvæ to be remarkably accelerated by adding to the water in which they were growing a dilute alkali. It has been shown further that a lowered alkalinity of the blood favors the action of pathogenic micro-organisms, and that as animals become immune to the action of bacteria, their blood becomes more alkaline. It seems to him reasonable to suppose that rheumatism is due to the action of various toxins at present unknown, but that its onset and continuance are greatly favored by the reduced alkalinity of the blood.

California Academy of Medicine.

Regular Meeting for January, 1899.

Dr. D. W. MONTGOMERY presented a specimen of cancer of the breast with the following history: Some time ago he received a small specimen from Dr. E. Hopkins with the request for an examination and opinion as to the nature of the growth. On examination he found some epithelial cells and other indications of cancer, and so reported to Dr. Hopkins. A few days later the Doctor called, expressed surprise at the diagnosis and gave the facts in the clinical history of the case. The patient was a woman of about 47 or 48 years of age, with no family nor personal history. A short time before seen by Dr. Hopkins, she noticed a swelling of one breast, which progressed so rapidly that she soon consulted him about it. The other breast was at that time beginning to swell. The breast was evenly enlarged and firm, but no hard nodules could be felt, nor was there any adhesion either of the skin or of the tissues to the chest wall. In fact, there was not a single sign of malignant disease and the case was thought to be one of phlegmon. Operation was undertaken with that idea still in mind, but on incision, as no pus was found, a sample of the tissue was removed and sent to Dr. Montgomery for his opinion. Subsequently the breast was amputated and the glands in the axilla, which were greatly enlarged, cleaned out. The enlargement of the breasts and lymphatics was the only symptom whatever.

Dr. DUDLEY TAIT presented a case of which he gave the following history: The patient, a man of 45 years, a sheepherder, has been located in Washington for the past fifteen years, herding sheep. His parents seem to have been perfectly normal, and he gives no personal history except that five years ago, while working in the mountains where he was exposed to damp and cold, he had an acute attack of articular rheumatism. This was following a long trip. He had much pain in the right hip, and a severe limp. This passed away, but he has had other attacks since. For about one and a half years he has been complaining of persistent pain in the right hip, somewhat better when he is exercising than when he is idle. There is a very perceptible limp, though he can walk

fairly well. About the time that the pain became more or less permanent, one and a half years ago, he also contracted syphilis. The rheumatism and syphilis are the only points in the history which I have been able to elicit. As you will see, there is some wasting in the right buttock and on the right thigh; there is also a mass on the right thigh, anterior to the femur, about opposite the greater trochanter, and very hard in consistency.

Dr. JONES—I made two examinations of this patient, one with the plate on the posterior, the other with the plate on the anterior surface of the hip. The skiagraph taken with the plate on the posterior surface was negative. It showed the femur, but the head of the bone and the acetabulum were very indistinct. The other plate, however, showed a large mass, with irregular outlines, about three to four inches in diameter, surrounding the head of the femur and so clouding the acetabulum. The shadow was too dense for any soft tissue.

Dr. SHERMAN—This seems to be a case of arthritis deformans. In this case, however, there has been little destruction of the articular cartilages, and the man has a fairly useful joint. The acetabulum and the head of the femur are in good condition; there is little swagging and sway and the limp is not marked; there is no crepitus; I should, therefore, be inclined to think that the deposit was entirely external to the capsule. One sees these cases occasionally, and the growth here is about as one finds it in similar cases. It is usually anterior to the trochanter. I remember a case I saw some years ago where the man had an acute attack and had to be put in a long traction splint, which treatment, together with iodid of potassium (he had had syphilis for forty years), resulted in an excellent recovery When I first saw him he said that he had had a swelling about the hip, which had been aspirated and a quantity of blood withdrawn. This statement I at the time doubted. Later on he had a similar attack in the other hip, and during the attack a swelling appeared. I then recalled what he had told me, and aspirated the tumor, withdrawing between 600 and 700 c. c. of bloody serum. This I unfortunately mislaid and so do not know its character. He made a good recovery, and when I last saw him he was able to go about very well. I have heard recently that he is now in the hands of Dr. Newmark and that there are ataxic symptoms. I at once thought of these hip-joints, and the suspicion has occurred to me that they may have been Charcot joints. This man seems to be pretty well off, for the cartilages are not much worn away. There is nothing that can be done for these cases except to put the joint at rest and save as much of the articular cartilage as possible. The shadow of the tumor as described by Dr. Jones would very well correspond to the appearance of similar deposits as fluid in the knee and which were skiagraphed for me by Dr. Jones. In this case of arthritis deformans of the knee joints there was great deformity and at the same time what I considered remarkable motion. I was somewhat surprised to see that the radiographs showed the deposit in the joints, for I saw in Dr. Sayer's office, when I was in the East, some radiographs of arthritis deformans of the feet, and I noticed that the deposits did not cast any shadow; there could be seen nothing but the amount of the deformity. In this case, of the knees, as well as the case before us, there must be a very considerable deposit of lime salt in the new tissue.

Dr. HUNKIN—I noticed that the swelling in this case has about the same feel as the swelling in some cases of tubercular hip-joint trouble which have recently come under my observation. Not that I think this case is tubercular; rather I agree with Dr. Sherman that it can be nothing but arthritis deformans. I simply noted the similarity in feel and consistency between the two forms of trouble. I remember two cases of this disease in the hip, which I saw last fall. One was a woman about 28 years old, and the other patient was a man of about 46 years. There was much pain in the hip, and in the case of the man there was considerable creaking in the hip on walking; there was also a good deal of limp. Complete rest, however, resulted in a fairly useful joint, though any hard work will incapacitate the man for some days.

Dr. TAIT—There is one thing which I do not exactly understand in this case, and that is, that the man feels better and has less pain and less limp when he is exercising a good deal than when he is idle. One would expect the contrary to be the case.

Dr. SHERMAN—That is certainly peculiar. A possible explanation which occurs to me is that as the joint is the more used, the synovial membrane is stimulated to greater secretion, and hence there is more lubrication for the joint.

Dr. KREUTZMAN then presented a paper entitled

A REVIEW OF TWO CASES OF CARCINOMA UTERI AND ADVANCED PREGNANCY.

He first devoted a few words to the question of cancer of the uterus, its probability of cure and recurrence, the various operations for its removal, and the prognosis in these cases. It was his opinion that nearly all cases recurred, sooner or later, and that in most cases the disease had progressed so far by the time the patient reached the hands of the surgeon that operation was hopeless except to add a few more weeks or months to the patient's life. Pregnancy complicating cancer of the uterus was rare, he thought, because cancer of the uterus usually occurs at a time when the activity of the uterus is not great and conception not liable to occur. The complication he considered a most deplorable one, and one demanding the most careful consideration on the part of the gynecologist as to the course of procedure. The first case he reported occurred in a woman about 35 years old. He was called in consultation by the attending physician as soon as the latter had examined the woman and discovered the true state of affairs. She was then in the fifth or sixth month of pregnancy; the cervix was very large and hard, but on account of the large size of the uterus it could not be decided whether or not there was infiltration in the pelvis. He considered the disease so far advanced that there could be no hope for the mother and so advised that nothing be done, with the hope that all would go well and the life of the child be saved. The attending physician differed with him and urged an operation, holding that there was a possibility that the life of the mother might be prolonged for some time if the uterus were at once removed, whereas it could not be prolonged if conception were allowed to progress to term. Operation was decided upon, the abdomen opened, and the adnexa found to be very much affected by the disease. The operation was a long and a bloody one, owing to the very greatly enlarged vessels which had to be tied off. The patient did not rally from the operation and died on the following day. The Doctor considered that the operation had been a mistake and that it would have been much better to try to save the life of a viable fetus than make the attempt to save the life of the mother, which in his opinion was in any event doomed. In the second case, the woman was younger and the pregnancy not so far advanced when the condition was diagnosed. Here the Doctor decided to await developments and allow the pregnancy to progress, hoping it would go on to term and thus save the life of the child. At about the fifth month, however, the mother developed eclampsic symptoms, had numerous convulsions and became unconscious. She was unconscious when the Doctor reached her. She was at once removed to the City and County Hospital and operation performed. She was very low at the time of the operation and did not become conscious before death, which occurred on the second day after the operation, in spite of all efforts. The pelvis was found to be pretty thoroughly infiltrated with cancerous material.

Dr. THORNE—These are certainly very bad cases. I have not yet had to encounter a case of cancer of the uterus with advanced pregnancy as a complication, and I do not care to. I think Dr. Kreutzmann's advice in the first case which he reported was good, and that the expectant plan is to be preferred. What can one do? He is confronted with a dilemma. One of the two is almost sure to die; shall it be the mother or the child? Perhaps nature will be more skillful than the surgeon, and I should counsel waiting.

Dr. HUNKIN—I should not consider the matter in that light, though I have not had such a case to decide, nor do I wish for one. I should not, however, consider the child for one second, if there was the slightest chance of doing what might save or prolong the life of the mother.

Dr. KREUTZMANN—If it is near the time of the viability of the child, I think we are bound to consider the infant for a good deal more than one second; sometimes for more than a day of careful thought. Most cases of cancer of the uterus are hopeless; and if complicated by pregnancy, they are quite so. I therefore think we should try to save the life of the baby, for it is almost certain that the mother must die.

Dr. THORNE—There are certainly cases where children have been delivered, even in advanced cancer of the uterus. The fetus has rights paramount with the rights of the mother, and it is so held both by the laws of the land in which we live and by the canons of the church. In most civilized countries he who destroys the life of the fetus is guilty of murder and, as guilty, is subject to arrest and punishment. The rights of the child should be held to be equal with the rights of the mother, and as such should be just as carefully considered.

Dr. SHERMAN—As I have listened to the discussion on this interesting question of the comparative rights of the mother and the unborn child, I recall the lectures of Dr. McLean.

He mentioned two classes of operation which he called mother's operations and child's operations. His advice was to save that one which had the best chance of life. If the mother had the best chance of living, save the mother, or operate with that intention; if the mother had but little chance of living, and the child had more chance of surviving, our efforts should be directed toward saving the life of the child. This is not a question of religion or theology; it is a simple question of physiology and ethics. Dr. Thorne has said that to destroy the life of a living fetus is a crime, yet I venture to say that he has himself emptied the uterus of a living ovum, when to allow the pregnancy to proceed would be certain death to the mother, who otherwise would recover. This is very often done as we know. It is simply throwing away an unknown life for a life of known value in the community.

Dr. HUNKIN—I think both Dr. Kreutzmann and Dr. Thorne have misunderstood what I said. I did not mean to say that I would under no circumstances consider the life of the fetus. I meant that if there was any chance, even of the smallest, of saving the life or prolonging the life of the mother, then we should not allow the life of the unborn but partly developed child to enter into the question at all. I should like to ask Dr. Thorne what he would do in the case of a woman, advanced in pregnancy, having a very small pelvis, and who would not consent to a Cesarian section?

Dr. Thorne—I should say to her: "Madam, you have a very small pelvis; one that will not allow a child to pass through it, and the only thing for you to do is to have a Cesarian section performed, and the child delivered in that way. If she should then refuse consent I should tell her to secure the services of some other physician. In answer to Dr. Sherman, I would say that no man can rise above the law, and no man can run counter to the spirit of the community in which he lives. The canons of the church do to a very large extent form the spirit of the community, and we must consider them. The physician may not recognize any religion or any theology, yet he must recognize the force of public opinion, and he can not go counter to it and continue to practice medicine. If any doctor thinks he is superior to the law he will find that he is mistaken and will subject himself to arrest and imprisonment; if he thinks he is superior to public opinion, he will soon find himself without patients. In nephritis, or some condition where pregnancy itself will be fatal to the mother, the fetus is a foreign body—a disease—and as such should be removed. There can be no question of propriety in such a case, for one being is destroying another, and so should be removed. Just as if one being tries to destroy another, both being adults, murder is justified in the law and theology. But with a viable fetus, where the mother is in a critic condition in any event, the case is different. Here it is recognized in law, and should be recognized by all physicians, that the child has rights which are equal to those of the mother If, however, it is a case in which the fetus and nothing else is killing the mother, the law says the fetus may be removed; remove it under proper conditions, and nothing can be said about it. But otherwise, with a living child in her belly, a mother has no more right to be considered than has the child.

Dr. SHERMAN—Dr. Thorne has misunderstood me. I do not consider myself to be above the law, nor above public opinion. The law is all right. But theology should not enter into our consideration; it is a matter of ethics, and ethics, crystalized, is the law of the land. Dr. Thorne evidently agrees with me that it is best to sacrifice the child to save the life of the mother. The rule should be to save the one with the most chance. But in deciding between the two, greater preference should be given to the mother, who has a known value, than to the child, a totally unknown quantity. We are not above the law, but we should be above the canons of the church.

Dr. HUNKIN—I agree with Dr. Thorne except in his use of the word "equal"; I do not think that the life of the child should be considered as of equal importance with the mother, nor should it have the same weight in making one's decision as the life of the mother.

Dr. THORNE—The most eminent jurists, the most eminent divines, have decided again and again that the rights of the child are above the rights of the mother. If any sacrifice is to be made, it should be made by the mother, who takes the chances of fatality upon herself when she takes up the responsibility of conception, and not by the helpless and unprotected child within her womb. One of the penalties of conception is this possible fatal termination, which the church maintains she must bear as a penalty of the original fall. The law and the canons of the church agree on this point, and in no uncertain voice has the question been decided many times.

Dr. KREUTZMANN—One point has not been touched upon, and that is the fact that the viable fetus in the mother's womb is without a protector, and therefore the physician's duty is to act as such a protector of the unborn. Destroying such a life is no trifling matter, and should be considered most carefully. One can not always say how much peril the mother is in on account of pregnancy, for we know that some women with nephritis are safely delivered, and that some women with very small pelves may give birth to living children. We should not be governed by theology or religion, but by ethics and practical experience. But certainly the life of the child should be just as much considered as the life of the mother, and the most careful deliberation alone can warrant evacuation of the uterus.

Dr. HUNKIN—I am of the opinion that I have recently seen some articles by lawyers on this very question, in which the contrary opinion to that of Dr. Thorne was expressed. In the particular case of Dr. Kreutzmann, I reasoned that as cancer had occurred with pregnancy as a complication, therefore the case was seen earlier than customary, for these cases are not usually seen till after the time of conception has passed. I therefore thought there would be more chance of saving the mother than in an ordinary case. I have not modified my original statement at all; the Doctor simply misunderstood me.

Denver and Arapahoe Medical Society.

Regular Meeting Jan. 24, 1899.

Dr. W. W. GRANT presented to the Society a paper entitled

A NEW OPERATION FOR EPITHELIOMA OF THE LIP.

He said that every operator on the mouth should aim to preserve as perfectly as possible its size and shape. The normal mouth should admit, without stitching, the first three fingers of the hand side by side. He considers the ordinary V-operation a needless sacrifice of tissue: the base of the triangle being at the vermilion border of the lip, there is consequently greater tension and contraction of tissue and lips, with resulting change of the mouth from oval to a round, sucker like appearance, the upper lip overhanging the lower, with frequent depression of lip at the point of union. He also believes that the extensive dissection of the skin from the inferior maxilla tends to increase the puckering of the mouth. Dr. Grant thinks he has succeeded in overcoming the most objectionable features by an improved method, which is simple, easily and quickly done and has excellent cosmetic and practical results. When the ulcer is near the median line the procedure is as follows: A straight perpendicular incision is made on each side of the diseased area and extending well below it. These are united by a transverse incision, removing a quadrangular block of tissue. From each lower angle of the wound an incision is now made obliquely downward and outward over the upper and lateral surface or border of the chin. These incisions give two large triangular flaps, and with little traction slide easily over the stationary tissues of the chin. The flaps are first united in the center, and the lower border then united to the chin. The tension is not great, even though a large part of the lip be removed. When the ulcer is at or near the angle of the mouth, the first incision is made from the center of the lip downward, the second from the extreme angle of the mouth downward, the two being united by a transverse cut, removing half the lip. From the right lower angle of the wound an incision is made obliquely downward across the upper edge of the chin and resting on a perpendicular line from the left angle of the mouth. A similar, but shorter, incision is made from the other angle of the mouth. The long flap is easily brought to the opposite side and united quickly to the opposite short flap, composed partly of cheek. The result of the operation is better than that of the simple V-operation. The mouth is not contracted and the lower lip is fuller and more prominent in the center. When it becomes necessary to remove almost the entire lower lip the procedure is as follows: After stitching the lip an incision is made from each angle of the mouth to the buccal mucous membrane. The mucous membrane is freely dissected around the wound and a short incision then made above and below, making a substantial triangular-shaped mucous flap, the apex of which is stitched to the angle of the skin incision.

The advantages of the operation devised by Dr. Grant were summarized as follow: The incisions are confined to the mobile, elastic portions of the lips and cheeks; the traction is mainly upon the cheek and none on the chin; there is less disfigurement.

The paper was illustrated by diagrams and the recital of the histories of three cases.

Dr. LEONARD FREEMAN cautioned against the use of pastes in epithelioma of the lip. He had several cases in which necrosis of the maxillary bone after paste had to all appearances healed up the epithelioma. The knife is certainly a less

painful procedure than paste. He is of the opinion that it is, after all, not the method of removal employed which is of importance, but whether the glands have been extirpated. The operation is not complete without the removal of such parts in which the malignancy is liable to manifest itself later.

Dr. J. M. BLAINE read a paper on

DERMATITIS EXFOLIATIVE PRODUCED BY THE USE OF CHRYSAROBIN, WITH NOTES ON TREATMENT.

J. D. M., aged 35 years, in December, 1897, suffered from an attack of rheumatism lasting three weeks. This was followed in January, 1898, by an attack of psoriasis numilosis and punctata. Treatment: potassium iodid, beginning with fifteen drops after each meal and increasing fifteen drops every week for four weeks. Local treatment consisted in painting the spots twice weekly with a 10 per cent. solution of chrysarobin in traumaticin. After three weeks considerable dermatitis was found on the shoulders, chest and back. A week later the patient complained of a freezing sensation, with general inflammation of the skin and beginning exfoliation of the epidermis. Temperature was 101, pulse 100. The following day, July 20, temperature was 100, pulse 94, and epidermis rapidly exfoliating on back and arms. July 22, temperature was 99.5, pulse 90; ankles swollen, skin drawn tightly and he walks with great difficulty. July 26, the skin was coming off the palms and soles in large flakes and patient was very nervous and exhausted. The scales have fallen off at the rate of one pint in the twenty-four hours. The patient slept on an average not more than two hours, on account of the great irritation produced by the loosening of the scale. In the hope of relieving the irritation and lessening the inflammation, the permanent bath was ordered on July 28. Relief was instantaneous. "In one brief moment he was transfurred from a condition of mental and bodily agony, such as only the pen of a Dante could describe, to a condition of perfect tranquillity and comfort." His pulse and temperature became normal the same day. He remained under water thirty-nine consecutive days; skin quite smooth and epidermis re-formed. The temperature of the water was at first hot, and then gradually lowered. At first sodium bicarbonate was used in the bath, but this dissolved the scales too rapidly and left the skin denuded and sore, and its use was discontinued. The water was changed twice daily. He slept in the bath, as the bed had no charms for him. His appetite remained excellent, and his bowels and kidneys performed their function regularly. He seldom asked for water to drink.

Dr. FREEMAN, in discussing the case, said that he saw in the Vienna hospitals special rooms with baths arranged with the view of their permanent immersion—mattresses, pillow, shelves filled with books, a trapeze hanging over the bath to aid the patient in changing his position, etc. He saw there a patient who sojourned under the water for a year. It is especially used in extensive burns. He suggested that all, or at least one, of the hospitals in Denver own such an arrangement, where the severely burned and other appropriate cases could be treated by the permanent bath.

Dr. E. R. R. AXTELL exhibited an enterolite from a patient of Dr. Pfeiffer, who died from obstruction of the bowels, which at the autopsy was found to have been carried by the impact of the enterolite in the jejunum. The stone measures five and a half inches in circumference.

PRACTICAL NOTES.

Quinin in Lupus Erythematodes.—A writer in the *Derm. Ztft.*, December, extols the benefits derived from large doses of quinin—over two grams a day—long-continued and combined with local treatment; thirty cases.

Interstitial Antisepsis in Senile Pruritus.—Prof. P. Parisot recommends putting senile patients distressed with pruritus on a milk diet, after purging, and prescribing a daily dose of two grams of benzo-naphthol. In every case in his experience, the violent and persistent pruritus was rapidly and permanently relieved.—*Semaine Méd.*, January 11.

The Permanent Bath for the Insane.—Beyer recommends placing the insane in a permanent bath for days, weeks or even months, especially all the cases of tumors and surface injuries, untidy cases, patients who insist upon undressing themselves, and some cases of mania, on which it seems to exert almost a specific influence. Most of the patients like the bath and keep surprisingly still.—*Munich Med. Woch.*, January 3.

Diagnosis of Adenoid Growths.—Adenoid growths usually bleed at the lightest touch, consequently a cotton tampon introduced into the nasopharyngeal space will be stained with blood when withdrawn, if adenoid growths are present.—*Arch. f. Laryn.*, viii, 3.

Anaphrodisia from Fowler's Solution.—Simonescu relates another case of sexual impotency causing thoughts of suicide, in a vigorous young man, traced to the use of arsenic, which he had been taking in the form of Fowler's solution, for malaria. Suppression of the arsenic, and tonics, soon restored him to normal.—*Gaz. degli Osp.*, January 3.

Thyroid Treatment in Arteriosclerosis, Etc.—Lancereaux reports four cases: sclerodermia; chronic rheumatism, gout and arteriosclerosis; arteriosclerosis causing cerebral hemorrhage with albuminuria, and a vasomotor affection of the extremities, all so improved by iodothyrin that an approaching and complete cure is anticipated.—*Bull. de l'Acad. de Méd.*, January 3.

Acute Edema of the Lung.—Poulain has observed a case of this rare affection developing by "poussées" until terminating with asphyxia, in which there were no cardiac, renal, dyscrasic nor toxic influences to which it could be ascribed, but merely bronchitic antecedents. The case seems to demonstrate that certain modifications in the pulmonary parenchyma may determine acute edema of the lung in persons predisposed.—*Presse Méd.*, Dec. 24, 1898.

Dyspepsia in Tuberculosis.—Maragliano observes: "the day that physicians become convinced of the necessity of respecting the stomachs of their tuberculous patients, that day the cure of this disease will take a long stride forward and prove a permanent advance. Creosote, guaiacol, etc., given without a single scientific or empiric reason, are the most frequent causes of the dyspepsia of tuberculous subjects."—*Gaz. degli. Osp.*, Jan. 1.

Zona and Tuberculosis.—Recent observations tend to establish that zona occurs more frequently in persons with, or predisposed to, tuberculosis. These cases of zona should be carefully examined for indications of tuberculosis. The connection between them has been emphasized anew by a recent case of intercostal zona in which the trophoneurotic lesion was located directly over and paralleled a pleuropulmonary lesion.—*Echo Méd.*, January 8.

Retained Injections for Habitual Constipation.—G. Klemperer has cured a number of cases of habitual constipation by having the subject take an injection of 250 grams tepid water on retiring, and retaining it until absorbed, progressively increasing the amount and lowering the temperature. An evacuation in the morning is secured with an ordinary injection, if necessary. Four to six weeks of retained injections usually reestablishes spontaneous defecation.—*Semaine Méd.*, January 4.

Birch-leaf Tea Diuretic in Cirrhosis of the Liver.—In two cases the amount of urine increased 500 grams to a liter in twenty-four hours, under the administration of birch tea, recommended by Prof. W. Winternitz for hydrops of cardiac or renal origin. The tea was made by boiling 150 grams of birch shoots in 400 grams of distilled water until reduced to 250 grams. A weaker decoction was given in the female case: 100 grams of shoots to 700 grams of water, reducing to 500 grams. She drank 500 grams a day.—*Semaine Méd.*, January 11.

Puerperal Pseudorheumatism.—The gonorrheal origin of the rheumatism appearing during pregnancy or a few days after delivery, is generally accepted now, and the discovery of the gonococcus removes all doubt and indicates treatment of the gonorrhea as of the articular affection. Out of 48 observations Bégouin found the knee affected in 17, the wrist in 18, the elbow in 9, the ankle and the hip in 2, all generally on the right side. He finds the best treatment complete immobilization in a plaster cast, with aseptic puncture, followed by a modifying injection if necessary.—*Gaz. degli Osp.*, January 3.

Warm the Sublimate Solutions.—Ottaviano finds that a sublimate solution heated to 40 degrees C. is much more rapidly bactericidal, but that the action at best is slower than usually supposed. A 1 to 1000 solution cold, kills the staphylococcus in cultures in three to five hours, but in pus not until after thirteen to fifteen. The 2 to 1000 solution kills it in cultures in two to three hours, and in pus in eleven to thirteen. Heated to 40 degrees C. the 1 to 1000 kills the staphylococcus in cultures in forty-five minutes, and the 2 to 1000 in thirty minutes. The bacillus coli and the streptococcus are killed more rapidly.—*Gaz. degli Osp.*, January 8.

Nirvanin, a New Local Anesthetic.—Professor Einhorn announced a while ago the discovery of a new anesthetic which he called Nirvanin, "a salt of diethylglycocollamidooxybenzoesäuremethylester." A. Luzenberger has been using it for infiltration and regional anesthesia in 134 operations, which are tabulated in the *Munich Med. Woch.* of January 3 and 10. He recommends nirvanin in high terms as a nontoxic, effective and convenient substitute for cocain and its solutions. The analgesia during and after the operation is complete; the solutions keep clear, have a decided antiseptic effect and stand sterilizing without injury to their anesthetic properties.

Electric Treatment of Lithiasis.—Moutier reports several cases of renal and biliary lithiasis relieved at once by the application of the high frequency current. In most cases the calculus passed off at the first séance, which may be due to the sedative effect of the electricity, arresting the pain and with it the spasm preventing the expulsion of the stone. In general the treatment lasts six weeks to two months, with a twenty- to forty-minute séance two or three times a week. The lithiasis is due to a slower nutrition, and Professor d'Arsonval has demonstrated that the high frequency current is one of the most powerful means to increase the organic contractions, and, in consequence, accelerate nutrition.—*Presse Méd.*, Dec. 24, 1898.

Subcutaneous Drainage of Anasarca.—Prof. P. Fürbringer has derived great benefit in a number of cases of anasarca from a soft rubber tube, two meters in length, with three holes slit in the central portion, inserted under and parallel to the derma, by means of a trocar five or six millimeters in diameter. The tissues contract around the entrance and emergence of the tube. The ends are held in a bottle, in which the serous fluid accumulates. When the patient wishes to get up, the tubes are wound around the member and the ends held with a small clamp. There has been no local infection in any of his cases; a liter of fluid drained away in the first twelve hours.—*Semaine Méd.*, January 11.

Respiratory Exercises in Bronchial Asthma.—S. Talma of Utrecht asserts that the muscles of the air-passages can be controlled by the will, or that this can be learned, and hence advocates the necessity of a series of respiratory exercises for persons affected with asthma. They must practice breathing less frequently and learn to breathe slow and deep. This prevents the cramp of the muscles. Speaking must be carefully regulated, and the breathing kept up slow and deep while speaking. The patient must practice and learn to keep the muscles of the neck, chest and abdomen in their correct position.—*Munich Med. Woch.*, January 3.

Improved Artificial Anus.—H. Cordua reports the case of a restaurant keeper who has an artificial anus a couple of inches above the classic inguinal anus, made in such a way that the intestine protrudes like a sausage twelve centimeters beyond the surface of the abdominal wall, with the anus at the extreme tip. He wears a truss-like arrangement over this protruding anus, with a receptacle that catches the feces without their coming in contact with his person, and he attends to his business as usual without any inconvenience. He notices by the weight that there has been a discharge, unscrews the lower part of the receptacle, cleans and replaces it without disturbing the bands and clasps that hold the appliance in place, eats as usual, and has gained a number of pounds during the five months since operated.—*Deutsche Med. Woch.* January 12.

Pleurisy with Effusion Treated with Guaiacol.—M. Prozovorovsky reports surprising success in pleurisy with effusion from painting the affected side with sixty drops of a solution of guaiacol and tincture of iodin, one to four, covered with an impermeable bandage; eleven cases. Five to seven repetitions were required; they produced no inconveniences; the fever fell from 0.2 to 2 degrees. He explains the favorable effect by the stimulation of the nerve terminals, which affects the thermic centers, and by the effect on the vasomotor centers, promoting the absorption of the effusion. A further effect may be the combination of the guaiacol with the morbid products circulating in the blood, thus preventing their localization in the pleura.—*Presse Méd.*, January 4.

Malignant Syphilis.—In a discussion of a case of hereditary syphilis which had destroyed the nose, spine and part of the bone floor of the skull in a child of 6 years, Besnier recommended pushing mercurial treatment to its utmost limits, and going far beyond the normal doses. Fournier reported cases rebellious to injections of calomel and inunctions, but cured by combining the two, and Galezowsky related the case of an officer dismissed from the service on account of atrophy of the papilla of the optic nerve, who took Hg. inunctions every day for two years, and recovered his sight completely. In such obstinate cases potassium iodid detracts from the benefits of the mercurial treatment and should be omitted.—*Munich Med. Woch.*, January 10.

Lactic Acid in Gynecology.—As lactic acid is a normal constituent of the vaginal secretions, Sneguireff assumed that it might prove a natural antiseptic for the vagina, and applied it in injections of a 3 per cent. solution, or painted the uterine mucosa with a 50 per cent. solution in metritis. The result was always favorable, and there were no inconveniences from its use. Dalché has modified this method and finds extremely effective the application to the cervix of tampons dipped in 3 per cent. lactic acid glycerin, once a week, with daily irrigation with warm water. The application is almost painless; does not interfere with the patient's occupation, and usually rapidly improves the leucorrhea. For an old, torpid metritis, he paints the cervical ulcerations with a 50 per cent. solution. —*Munich Med. Woch.*, January 3.

Results of Treatment of Urinary Passages.—Casper reports a series of experiments on dogs and rabbits, injecting a 2 per cent. solution of nitrate of silver into the urethra and bladder for a long period, and the animals killed in the course of six months to a year. In none of them was there to be found the slightest trace of inflammation, constriction or proliferation of the tissues. On the contrary, the tissues seemed normal, with the exception of the discolorations resulting from the deposits of silver. The results were the reverse with others treated with a 2 per cent. solution of zinc chlorid. The epithelium had proliferated, in some places, to six times the normal thickness; there were round-celled accumulations and intercellular tissue growth, with evidences on all sides of the severe injury and destruction caused by the zinc chlorid treatment.—*Derm. Ztft.*, December, 1898.

Salicylic Acid for Granulous Conjunctivitis.—Moty claims that the improvement is much more rapid and pronounced with salicylic acid than with other remedies; it lasts longer, and progresses without interfering with the patients' occupations, until even old granulations with vascularization and infiltration of the cornea are completely cured. He applies a solution 3 gm. salicylic acid to 30 gm. 60 per cent. alcohol, on a cotton tampon held with forceps, touching with it all the affected points, after turning back the eyelid, which is held with the

left hand. A moist antiseptic tampon is used to wipe the lids before and after. The pain is sharp at first, but soon passes away. The cornea tolerates the acid without difficulty. The applications are repeated every day at first, then diminishing to once a week, according to the results obtained.—*Presse Méd.*, Dec. 24, 1898.

Earache—Its Importance.—Dr. F. W. Hinkel (*Buffalo Medical Journal*) summarizes in effect as follows: Earache, however slight, may signify disease; a recurring earache in children is almost always due to lymphoid hypertrophy of the pharynx; permanent impairment of the hearing, therefore, is only to be prevented by early surgery of the "adenoids"; acute inflammation of the middle ear may be aborted by early and precise treatment of a general sedative character; relief unobtained by the second day requires an expert examination, and finally intratympanic pressure is to be relieved in order to forestall intratympanic pressure, with possible involvement of mastoid cells or intracranial structures.

Vaginal Cesarean Operation.—Dührssen has performed this operation twice, extracting in one case a child weighing 4500 grams, in five minutes. Eleven other similar operations have been performed, with three deaths. In four cases of pregnancy at term, three of the children were saved. In eight cases there was a complicating cancer of the uterus, which is the most urgent indication for vaginal Cesarean operation, as all danger of infecting the peritoneum is avoided. The mortality thus far has been 27 per cent., while for eighteen cases of the classic Cesarean operation he found a mortality of 44 per cent. The danger of hemorrhage is slight; the flow of blood ceasing as the uterus retracts, so that no more is lost than during a normal delivery. In case of cancer he extirpates the uterus after extracting the fetus.—*Munich Med. Woch.*, January 10.

Facial Paralysis of Otic Origin.—Facial paralysis due to an old otorrhea is usually caused by compression of the nerve by fungus growths or a sequester. It is only very rarely that it is possible to determine the point of compression. Electric tests are not to be depended upon. It is not necessary to search for the nerve. Open the mastoid cells, scrape, curette, resect and extirpate every scrap of diseased bone, especially in the region of the Fallopian tube. Do not pay any attention to the nerve except to avoid injuring it; removing the compression will prove sufficient. Moure concludes his article (*Revue Hebd. de Laryngologie*, Dec. 17, 1898), by insisting upon the immediate suture of the retra auricular incision, without leaving the slightest solution of continuity by which infection might enter.

Surgery of the Middle Ear.—G. Faraci states that primary hyperplastic otitis of the middle ear, accompanied by serious acoustic lesions, is an absolute counterindication of an operation, as removal of compression in the labyrinth aggravates the deafness and vertigo. Before operating on the ear, he adds, it is well to have the power of the hearing tested and noted down, as the subjects may refuse to recognize the improvement. In eight cases he mobilized the stirrup; in seven he extracted it. The hearing was improved, and the subjective disturbances diminished in all but one case. In half the cases the hearing was also improved on the non-operated side. There was intense vertigo in one case for twenty-four hours; in the rest it was slight and transient. The immediate result is at times better than later, as the neoformations or the tympanic membrane grow again. He instils a few drops of cocain into the tympanum after cutting a flap in the posterior superior quadrant of the membrane.—*Presse Méd.*, January 4.

Ophthalmoscopic Examination in Endocranial Otitic Complications. Prof. G. Gradenigo states that lesions of the optic papilla are observed in about half the cases of endocranial complications of suppurative otitis, and consequently should be carefully sought, as they are frequently the first and only indication that the suppuration has invaded the cranial cavity, enabling an early diagnosis and effective treatment. He does not attempt to explain the mechanism of the papillitis, although he suggests that the chief factors may be the limitation of the endocranial space and compression of the sigmoid sinus. The papillitis affords no information in regard to the nature of the location of the endocranial lesions, but its disappearance after intervention is an index of the efficacy of the operation performed. His study of the subject is based on 635 observations, 74 personal.—*Annales de la Soc. Med.-Chir. de Liège*, November, 1898.

Treatment of Chlorosis with Dyspepsia.—Professor Thibault first enjoins an exclusive milk diet for several days or weeks, returning gradually to eggs, white meats and boiled fish; no wine, no coffee. He commences the iron as soon as the gastric pains have ceased, but in small doses. He prefers protoxalate of iron and pulverized rhubarb, āā .15 gm.; for one powder. Take two a day. If the iron causes disturbance, administer with it a powder containing .20 gm. sodium phosphate. Hydrochloric acid will promote digestion: aq. dest. 200 gm., hydrochloric acid 2 gm. Take a tablespoonful in a quarter of a glass of water at the close of the two principal meals. If the intestines are torpid, replace the rhubarb in the iron pills with aloes: Ferrico-potassic tartrate .15 gm., pulv. nux vomica .03 gm., pulverized belladonna .01 gm., aloes .05 gm., extract of gentian q. s.; for one pill. Take two a day. He adds that aloes should be carefully avoided in cases of hemorrhoids.—*Presse Méd.*, Dec. 28, 1898.

Kronlein's Craniometer.—This simple contrivance has no fixed measurements, but is adjusted to each individual skull in every particular. It consists of six thin flexible narrow strips of metal, two horizontal and three vertical, each adjustable on a slit and screw. The lower horizontal strip fits around the head, crossing the nose, with a projecting peg resting in the ear. The rear vertical line passes from this over the head, behind the mastoid. The second vertical strip passes in front of the ear, with the linea vertical. zygomatica in front of this. The second horizontal strip crosses the forehead above the orbit, extending only to the linea vertical. retromastoidea. At its juncture with the linea zygomatica a slanting strip is pivoted on a graduated segment of a circle, by which the linea Rolandi is located, and half the angle thus formed indicates the linea Sylvii. The points of juncture of the upper horizontal and the two rear vertical strips are the points recommended by Krönlein for trephining for hematoma of the arteria meningea media. The square formed by the two horizontal and the two rear vertical strips shows the space preferred by von Bergmann for resecting the skull in the search for an otitic abscess in the temporal lobe.—Illustrated in the *Cbl. f. Chir.*, January 7.

Bruns' Subperiosteal Amputations.—Bruns' method is briefly as follows: a circular incision through the skin and muscle down to the bone, the skin pulled up as much as possible; on both sides a lengthwise incision on the inner side of the tibia or fibula; detaching the tibia and fibula from the periosteum envelope by means of the respatorium, without disturbing the normal relations existing between the periosteum and the soft parts over it; sawing the bones, first the fibula and then the tibia, from above obliquely downward; suture of the layers of periosteum and muscles with a buried catgut suture; suture of the outer skin. The circular incision is made in two strokes in case of amputations of the upper two-thirds, or with unyielding skin. Smooth recovery ensued in seventy-three out of eighty-one thus amputated. There was suppuration in eight cases and gangrene of the flap in three from constitutional causes. The technic is simple, creating simple, favorable conditions for healing, and the process has the advantage over Bier's more complicated method, in that it can be applied even when *prima intentio* is not to be expected.—*Deutsche Med. Woch.*, January 12.

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SATURDAY, FEBRUARY 11, 1899.

THE ROLE OF THE SPLEEN IN EXPERIMENTAL AND NATURAL INFECTIONS.

It has long been known that in many infectious diseases the spleen swells up, and shows marked changes in its histologic structure. The exact rôle of the spleen, however, in the "struggle" of the organism against infection is still somewhat obscure. The results of experimental splenectomy, observed by various investigators of this problem do not at all agree. Among the more recent investigations in this line may be mentioned those of COURMONT and DUFFAU[1] and of BLUMREICH and JACOBY.[2] The first named authors found that the spleen did not play the same rôle in all infections. Sometimes it seemed to be useful, at other times even harmful, all according to the nature of the infectious agent. Its action upon the toxins of the microbe may differ from that upon the microbe itself, and the same animal may react differently to infection soon after removal of the spleen than later. They think that these apparently so contradictory results are explainable, perhaps, by the condition of the fluids of the body and the modifications that result in the fluids after removal of the organ.

BLUMREICH and JACOBY established first, that complete extirpation of the spleen does not produce any readily recognizable harmful influence upon the health and vitality of the animals. On comparing the course of experimental infections in splenectomized animals with that in normal animals, they found that after removal of the spleen, diphtheria infection is withstood just as well as under normal conditions. Splenectomy does not hasten death from anthrax infection, which produces about the same effects and pursues the same course, whether the spleen be present or not. Animals which are deprived of the spleen seem to withstand pyocyaneus infection better than normal animals, and the same seems to be the case, as far as can be judged from the experiments of these authors, with regard to cholera bacteria. It, therefore, seems to be quite definitely ascertained that the experimental removal of the spleen may have an apparently favorable influence upon the course of certain infections.

The experiments bearing upon the course of experimental bacterial intoxications after splenectomy seem to show that here it makes no particular difference whether the spleen is present or not. The ligation of the splenic vessels, the spleen being allowed to remain, seems to have the same influence upon subsequent experimental infection as does splenectomy. On testing the bactericidal powers of the blood after splenectomy it was found that they are somewhat increased; whereas the blood does not seem to acquire any new properties toward toxins. One of the striking changes in the blood after splenectomy is an increase in the number of leucocytes, especially the lymphocytes. This has been known for some time, but in order to establish with absolute certainty that leucocytosis develops after splenectomy in guinea-pigs, our authors pursued original investigations in regard to this point also, and they found that an actual hyperleucocytosis does develop after splenectomy; a leucocytosis which is not explainable as due to the operation wound only, because no such increase in leucocytes developed in four guinea-pigs in which the same operation as for splenectomy was made, with the exception that the spleen was not removed. KURLOFF, who worked in EHRLICH'S laboratory, also found that splenectomy in guinea-pigs is followed by leucocytosis.

As will have been observed, splenectomy is followed by increased resistance to certain infections, by increase in the bactericidal powers of the blood and by increase in the number of leucocytes. It, therefore, seems reasonable to suppose that the leucocytosis and increase in the bactericidal powers after splenectomy stand in close causal relation. This is in accordance with the results of the numerous investigations of various authors concerning the bactericidal powers of the blood, which have appeared during the last few years. The remarkable fact in connection with these observations is, that the leucocytosis develops under entirely different circumstances than heretofore noted. In order to still further clinch this point, the authors made the following experiment: They inoculated fourteen animals with the bacillus pyocyaneus; a few hours after inoculation they removed the spleen from eight. The results were as follows: of the eight, six died, and of the six which retained their spleen, only

[1] Archiv. de Med. Experim., 1898, x.
[2] Zeitschr. f. Hyg. u. Infektionskr., 1898.

two died. The results, as were to be expected, are therefore diametrically opposite to those observed when the infection takes place after the splenectomy, and bring forth further proof of the importance of the hyperleucocytosis and other changes after splenic removal.

Further investigations are, of course, necessary in order to establish whether or not other changes of a chemic or morphologic nature occur in the organism after splenectomy. As regards the kind of leucocyte which is responsible for the leucocytosis after splenectomy our authors give no information, but EHRLICH makes the statement, on the basis of KURLOFF'S experiments, that the leucocytosis depends upon an increase in the lymphocytes. By lymphocytes EHRLICH means cells of about the size of a red-blood corpuscle, provided with large round homogeneous nuclei, surrounded by a small rim of protoplasm. BLUMREICH and JACOBY'S experiments therefore seem to show that the protective powers of the blood of splenectomized animals may depend upon the increase in lymphocytes. Another explanation of the increased resistance of splenectomized animals might be suggested, namely: that the spleen during health retains the detritus of disintegrated leucocytes and other cells; this leucocytic detritus is currently regarded as being closely related to the alexines, and after splenectomy it would accumulate in the blood and thus increase its bactericidal powers.

How far are the facts deduced from the experiments above referred to applicable to clinical conditions? In infectious diseases, especially typhoid fever and malaria, the spleen swells up. Such a swelling does not necessarily need to be reactive and protective, but might be dependent upon injury to the organ and resemble, for instance, the swelling of the kidney in acute degeneration in infectious diseases. Taking it for granted that the lymphocytosis after splenectomy influences infections in the same favorable way as it is acknowledged that increase in the polynuclear leucocytes does, then we have strong indications that the splenic lymphocytes produce alexines and that the splenic tumor of infectious diseases, which depends largely upon increase of the lymphocytes of the spleen, may play a similar rôle to the increase in the polynuclear leucocytes in many infectious diseases without splenic swelling. It is a well-known clinical fact that in typhoid fever and uncomplicated tuberculosis a very marked swelling may develop, whereas there is no increase in the polynuclear leucocytes. In pneumonia, polynuclear leucocytes increase and develop up to the time of the crisis, whereas the spleen remains within moderate limits, and GERHARD has shown that after the crisis the spleen begins to swell, while the polynuclear leucocytes diminish. BLUMREICH and JACOBY are inclined to emphasize this quite regular alternation of splenic swelling and polynuclear leucocytosis, and to look upon both these phenomena as of similar nature and significance. At one time the lymphocytes are increased; in another case the polynuclear leucocytes. It is in accordance with generally accepted views to assume that the different microbes influence, through chemotaxis, now one, now another variety of cells. The spleen would, therefore, seem to play an important part in infectious diseases because it is the origin of the lymphocytes.

THE SURGERY OF THE BILIARY APPARATUS.

It would be difficult to say that in the great advance made by surgery in the past twenty-five years one organ or set of organs had been benefited more than others, but it will readily be admitted that there has been no want of activity in the domain of abdominal surgery, and especially that of the biliary apparatus. Surely one must admire the boldness and applaud the success of operations involving attack upon and removal of parts thought indispensable for the continuance of life, for we have been shown how kidney, stomach and spleen have been wholly extirpated and bowel and liver in part excised, how artificial communications have been established between stomach and bowel, between bowel and bowel, and between biliary passages and bowel. An instance of more than usual interest is reported by TREVES in the *Practitioner* for January, 1899, in which obstructive jaundice of sixteen years' standing, dependent upon absence of the choledochus duct, as well as the associated symptoms, was relieved by celiotomy and cholecystenterostomy. The patient was a young woman, 19 years old, who became jaundiced at the age of three years, without apparent illness or abdominal disturbance, the discoloration soon assuming a profound degree and persistency. The stools were white or clay-colored, the urine of a deep mahogany tint and occasionally offensive. Menstruation had occurred but twice. The face was swollen, puffy and expressionless, and suggestive of myxedema. The temperament was depressed, the intellectual state dull. Dyspepsia and constipation were present, and occasionally attacks of vomiting occurred. Bleeding from the gums and nose was common. Febrile attacks took place about once a month, in which the temperature rose to 104 degrees F. The liver was said to have been enlarged at the age of 10 years, but it was now found to be of normal dimensions. The patient, although well nourished, was not improving in health, and her condition was almost deplorable. Treatment had been unavailing. As it seemed probable that the jaundice was due to some congenital defect in the biliary passages, the condition of the patient appeared to justify at least an exploratory operation. Celiotomy was accordingly performed, and the liver found of purplish-green color and unduly firm. The gall-bladder, distended with mucus and faintly stained with bile, was normally situated. The cystic and hepatic ducts were appar-

ently normal, joining and forming a common duct, which ended almost at once in a hard, fibrous nodule, placed transversely to the long axis of the duct. The ducts were all a little distended; the common duct was not half an inch in length and impervious at its distal extremity, ending abruptly at the fibrous nodule. Beyond this nodule no trace of a duct could be discovered; nor was any duct noticed entering the duodenum. There was not even a fibrous cord continued beyond the nodule. Cholecystenterostomy was performed with the aid of a Murphy's button. The patient made a rapid recovery, and the button was passed in a fortnight. The second stool passed after the operation contained bile, for the first time in sixteen years. After ten months the patient was greatly improved in appearance. Some jaundice, however, still remained. The mental condition was much brighter. The patient had lost fourteen pounds in weight. The stools appeared normal, as a rule, although occasionally clay-colored, when also the jaundice increased. The urine was still bile-stained, and constipation, bleeding from nose and gums and depression persisted. The febrile attacks had ceased, although the evening temperature was often as high as 100 degrees. Improvement was slow but progressive.

While the report of this case is especially interesting by reason of the successful result, the anatomic and physiologic conditions present are worthy of some consideration. It would be difficult to decide whether the absence of the choledochus duct was congenital, an agenesis or an aplasia, or acquired, as the result of inflammatory obliteration. Although jaundice and other symptoms of biliary retention were not noticed until the third year, it is just possible that these might have escaped observation or that for some unexplained reason they did not appear. The description certainly furnishes no evidence of an inflammatory origin for the absence of the choledochus duct. Some light might perhaps be thrown on this possibility by the condition of the pancreatic duct and its papilla in the duodenum. The case, along with many others, shows that life may be maintained and digestive function be performed without the presence of bile in the bowel, except perhaps of such infinitesimal quantities as could find their way thither through the blood-stream and intestinal juices. It may be, further, that compensations were more readily effected, and function vicariously transferred, in consequence of the youth of the patient. That bile, or at least its pigment, continued to be excreted in the urine after the operation and the establishment of an outlet for the bile might be attributed to the absorption of that deposited in the tissues; and perhaps to some deficiency of activity in some portion of the long-unused biliary apparatus. That the liver escaped grave change, so far as could be detected, also might be due to the avidity with which resorption into the blood of the bile secreted by that organ had taken place.

THE ECONOMIC ASPECTS OF THE LIQUOR PROBLEM.

Under the above title, Col. CARROLL D. WRIGHT, Commissioner of Labor, Washington, D. C., has issued a report devoted entirely to the economic aspects of the liquor problem, as the result of an investigation authorized by Congress. This report embraces 267 closely printed pages with tables and statistics, and the laws of each State regulating license, taxes and fines. The following are some of the most interesting facts:

The number of distilleries in operation in the United States, according to the last revenue return, was 6187, and the number of breweries was 1866. The Bureau of Statistics of the Treasury Department has for a number of years published a table giving the total per capita consumption of distilled spirits, wines, and malt liquors. According to the last available return, the total quantity of distilled spirits of all kinds consumed during the year was 71,051,877 proof gallons; of wines, 10,701,406 gallons; and of malt liquors, 1,080,620,165 gallons. The per capita consumption has greatly varied. In 1840 it was 2.52 gallons of spirits, which declined to one gallon in 1896. In the case of wines, it was 6.29 gallons in 1840, and 6.26 gallons in 1896. Malt liquors, which showed a per capita consumption of 1.36 gallons in 1840, had risen to 15.16 gallons in 1896, doubtless owing to the enormous increase of the German section of the population. It is also to be noted that 10,976,000 gallons of spirits, or about one-seventh of the entire quantity, were consumed in the arts, manufactures, and medicine during the year. The total number of establishments in the United States engaged in the liquor traffic for the period that ended June 30, 1896, was 161,483, the capital being $957,-162,907. The number of individual proprietors or members of firms was 191,519, and the total number of persons employed was 241,755. Of the above amount, $412,188,729, or 42.06 per cent., represented the value of land and buildings, fixtures and other properties; and $544,974,178, or 56.94 per cent., was the value of rented property. The estimate of the annual taxes paid on the property was $10,075,120.

The revenue derived from the manufacture and sale consists of general taxes levied on real and personal property employed therein, the United States Internal Revenue taxes, customs duties on imported liquors, license fees, or special taxes collected under authority of the separate States, counties and municipalities, and fines collected for infringement of the revenue law. During the year under review, the central Government received for license fees $114,450,861. In addition to this amount the various States derived a revenue of $10,399,015 from the liquor traffic; the counties, $5,011,225; and the municipalities, $34,155,299, making a total of $164,016,401 for the whole country. Adding fines and customs duties, the grand total is

brought up to $183,213,124. By far the largest amount was raised in the State of Illinois, $35,104,548, followed by New York State with $27,219,965. The States of Ohio, Kentucky, and Pennsylvania each ranged from eleven to twelve million, and of the rest fourteen were considerably below $200,000.

The production of distilled spirits has varied greatly during the last seventeen years. The quantity in 1896 was about the same as in 1880, but there have been considerable differences between those two years. In 1893 the quantity rose to 131,010, 330 gallons. In the case of domestic wines, also, the total quantity produced has decreased from 23,453,827 gallons in 1880 to 15,080,000 gallons in 1890. But the production of breweries has increased from a little over thirteen millions of barrels in 1880 to 35,859,250 barrels in 1896, showing a marked and unfailing growth throughout the period.

A very interesting chapter is devoted to the experience and practice of employers relative to the use of intoxicants. Six thousand nine hundred establishments are reported as employing about two million men. Of this number, 5863 employers make inquiries as to the drinking habits of the men employed. Of these, 703 are transportation companies, and only 24 companies fail to consider the drink habits in hiring men.

In manufacturing, 2940 report inquiries as to the habits of men employed and 783 make no inquiries. The three most prominent reasons given why employees shall not use intoxicating liquors are: the danger from accidents; the failure to carry out duties which are responsible; and general unreliability and inefficiency. Three thousand five hundred and twenty-seven establishments reported that men employed at night work were more addicted to the use of spirits, while 1459 thought night work made no difference with the habit of drinking. Ninety-nine establishments reported that men subject to overwork were more liable to drink, and 436 did not think this made any difference. About the same proportion reported that exposure to severe weather was a cause, and an equally large number thought there was no difference. The same general figures were given where men were irregularly employed. Pay day is found to be a time in which the largest amount of drunkenness follows. The tables of the means used to prevent the use of liquor among employees is a curious list of measures for prevention, of which discharge seems to be the most prominent. Another equally curious table is the means suggested by employers to lessen or stop all consumption of spirits among workmen and others. A very curious table is given of the places where spirits are sold, and among others is mentioned a gold cure. Other tables containing list of materials used in the manufacture of the various spirits are given.

This report is the first of an official investigation into this much confused topic. It is understood that another more detailed inquiry will be made by the Bureau. This report emphasizes the need of a National health board which could make such inquiries far more accurate and scientific. It is facts of this character that are needed to make legislation intelligent and practical.

PROPOSED MEDICAL LEGISLATION IN ILLINOIS.

The State of Illinois, which was about the first to restrict unlimited license in medical practice, has come to be behind the majority of its sister commonwealths in this matter of requiring scientific qualifications in its medical practitioners, and the medical profession within its limits has suffered in consequence. To remedy the present state of affairs and to bring the State abreast of the more advanced opinion of the time new medical legislation is demanded, and a bill for "an Act to establish a State Board of Medical Examiners, prescribing its powers and duties, to provide for the licensing of practitioners of medicine and of midwifery, and to regulate the practice of medicine in the State of Illinois, and imposing penalties, and to repeal all acts or parts of acts (i.e., the present Medical Practice Act of Illinois) in conflict therewith," has been introduced into the Illinois State Senate by the Hon. C. P. GARDNER of Mendota. This bill has been endorsed and recommended by the State Board of Health, the Illinois State Medical Society, the Illinois Homeopathic Medical Association, the Illinois State Eclectic Medical Society, and by the Chicago Medical Society and several county and municipal societies.

The bill provides for the creation of a Board of seven members and a secretary. All persons not now licensed, desiring to begin the practice of medicine in the State, must pass an examination before the Board in the general topics and subjects a knowledge of which is commonly and generally required of candidates for the degree of Doctor of Medicine by reputable medical colleges in the United States. Applicants must be graduates of some legally incorporated medical institution, as may be determined by the Board. Midwives are also to be examined, each applicant to be a graduate of a school of midwifery complying with the requirements of the Board. The examination fee for physicians is $20; for midwives $15. The bill also provides that all licenses issued to physicians and midwives shall expire one year from date, and shall be renewed annually by the Board for a fee not to exceed fifty cents. "The Board may refuse to issue any license provided for by this Act, whether an original or renewal license, if it shall appear that the person applying therefor has been guilty of persistent inebriety, or the practice of criminal abortion, has been convicted of a crime involving moral turpitude, or has, by false or fraudulent representations, obtained practice in his or her profession, or by false or fraudulent practice in his or her profession has obtained money or any other thing of value.

Provided, however, no person shall be finally refused a license until after the applicant for the same has been given at least thirty days' notice of the grounds for such refusal, and opportunity given the accused for a hearing before the Board to show cause why the Board shall not finally refuse his or her license, at which hearing the accused shall be entitled to be represented by a counsel."

A careful canvass of many members of the Senate and House, evidences the fact that while the majority are in favor of the principle involved in this measure, there is quite an undercurrent of opposition to the creation of "any more new boards." For this reason it is possible that, if the measure receives favorable consideration, the duty of enforcing its provisions will devolve upon the State Board of Health, although the Board at its last meeting, January 17, recommended the establishment of a Board of Medical Examiners. There is also some opposition to the provision requiring all medical applicants to be graduates of medical colleges. Under the law now in force, non-graduates are examined by the Board, the examination being "of an elementary and practical character, but sufficiently strict to test the qualifications of the candidate as a practitioner." Should the proposed measure become a law, those who have not graduated at a college in "good standing" with the Board can not even appear for examination. There have been several expressions of opinion to the effect that the probability of the bill becoming a law would be greatly increased if it were formulated more in accordance with the resolutions of the State Board of Health adopted in 1892, recommending that the fitness of candidates for the practice of medicine in the State be determined by examination and without reference to when, where or how they attained such fitness.

As might be expected, there is some antagonism to this proposed measure, especially relative to the renewal clause. This, however, emanates principally from those who have no licenses and who by no possibility could secure the same, even under the present law, under the provisions of which the State Board of Health is obliged to recognize graduates of legally chartered medical colleges in "good standing," in other words, colleges which fully conform to the practice of the majority of established medical institutions in the United States. The renewal clause naturally seems, at first, a little annoying to a physician, but the same thing, in effect, has worked well in the pharmacy law, and its inconveniences are more than balanced by its advantages. It will keep the profession in close touch with the Examining Board and will be a constant check on irregulars, while the small amount required will scarcely be a burden to the most impecunious of doctors, even in these times of professional overcrowding and starvation.

The fact that Chicago has become of late years one of the chief medical centers, and the laxity of the Illinois laws hitherto have led to the founding there of "diploma mills," which the efforts of the State Board of Health have not been, so far, fully successful in suppressing. To meet the needs, therefore, the Secretary of the Board, Dr. J. A. EGAN, and Secretary of State ROSE have prepared two bills, one of which it is thought will pass the legislature. In substance, they are practically the same, the substance of each being that no degrees in medicine, pharmacy or dentistry shall be given by any institution not approved by the respective State Boards of Health, Pharmacy and Dentistry. As the bills are drawn up, there may be some possibilities of litigation as to the power of revoking or amending regular charters issued by the State legislature in former years. It is to be hoped that due consideration will be given to this matter, as it would be extremely unsatisfactory to have reform laws declared unconstitutional and to be set back into the former condition of chaos as regards the power of granting medical degrees. At the present time a fraudulent diploma mill can be suppressed by legal methods, but these are tedious and costly, and it can immediately start up again under new articles of incorporation and a new name, requiring new proceedings for its suppression, and so on *ad infinitum*, or till some change is made in the laws regulating such corporations. It is therefore to be hoped that whatever is done in Illinois in this direction will be done thoroughly and well and will leave no opportunities for evasion or legal nullification.

With the new practice act passed and enforced, and the needed legislation to prevent fraudulent diploma selling, the State of Illinois will be again in a position to rank with the most advanced of her sister commonwealths in this matter of enlightened regulation of medical practice.

CORRESPONDENCE.

A Plea for Alcohol.

LIMA, OHIO, Feb. 1, 1899.

To the Editor:—In the JOURNAL of Nov. 26, 1898, is found the following from the pen of Dr. T. D. Crothers: "It is a startling fact that *all* the theories current of the food, tonic, stimulant and medicinal powers of alcohol have *no support from modern research*" (italics mine). This proposition is found near the close of a communication bristling with authorities, all of repute, who have, in detail and specifically, as regards the action of this drug on the nerve-cells, its effects on metabolism, its deteriorating influence on the leucocytes, seemingly established a basis on which Dr. Crothers may plausibly found his argument.

The writer of this will not allow precedence to any one in his appreciation of the service that Dr. Crothers has rendered to his kind by correctly diagnosing and successfully treating that perennial plague, inebriety. No individual has done more, and few, if any, have achieved so much (and that, too, in the face of obstacles planted, nourished and fostered in tradition and prejudice) in convincing the world that inebriety and kindred enslavements are *diseases*, and not necessarily moral delicts. The immense significance of this progressive stride in the way of enlightenment is not even yet fully comprehended and

measured in its application to penology, morality, and the great unsolved problem of human responsibility. But the best of men—wise and experienced as well—are sometimes carried by the rushing waves of enthusiasm beyond, or rather, outside, that safest area, where calm reasoning, reflection and judgment hold sway—that realm in which the consensus of opinion of the most competent is held to be the nearest approach to the criterion of truth. Viewed from the height of this least-assailable standpoint, how shall we deal with the uncompromising, dogmatic assertion of Dr. Crothers, as previously quoted?

If we refer to alcohol as an analeptic, or tonic, or both, and, as such, a generator, or at least a conservator of force, we are told it has no such power; if we venture to offer it as a stimulant, a temporary sustainer of vital functions, we are informed by the voice of authority, prompted by the results of "modern research," that we are proffering only a delusion and a snare; but let us not forget that these new assurances controvert the testimony of the ages, and antagonize the lessons, the experience of past centuries. We may be reminded, however, that many beliefs cherished during vast intervals of time, have been perforce abandoned; that Ptolemaic astronomy held its place in the schools for 1500 years; that it is barely a half century since geology banished to the region of allegory the Genesitic narrative of creation. But such arguments as these need not concern earnest men who have familiarized themselves with the fair face of evidence. Science lights and leads the way along a safe road, and they learned long since to disregard the literal interpretation of the Mosaic account.

To whom can we refer this question with greater confidence than to the physiologist and to the adept in therapeutics? Concerning the first, I will stake my reputation on the statement that 99 per cent. of the teachers of physiology in our best medical schools at the present day hold the opinion that a certain quantity (varying in individual cases) of alcohol will be completely oxidized in the system, and it, as Stewart says (Physiology, 1897), "is therefore a food substance." He adds, "it is a very valuable cardiac stimulant; in certain diseases, is sometimes useful in cases of slow and difficult digestion. Alcohol is of no use to healthy men, although in moderate doses it is not harmful to healthy men, living and working under ordinary conditions." Loomis, Bartholow, Bowditch, Warren, Osler, Senn (but why attempt to name the innumerable), all controvert the conclusions of "modern research," as before mentioned, for they all testify to the value of alcohol as a *stimulant* in those conditions we find after the reserved vital forces have been largely drawn upon, by shock or severe illness. It is to be remembered, moreover, that such men as these are likely to be well-informed as to contemporary theories and doctrines, and have the most ample facilities for putting them to test; therefore, if we find no mention of their names in the list of those who have striven to transform this particular one of the genii, so potent for good or evil, into an utterly malevolent servant of Eblis, we may well hesitate before throwing away the heritage that has come to us through observation and experience until we are better assured.

But there is a wider range of vision, a larger view of this subject, accessible to us, which is well worth contemplating. If the dogma of Dr. Crothers, fortified by the opinions of Drs. Berkely, Andriessen, Harley, Wilkes, Glaser, et al., were in a minor degree true, the logical sequence must have been inevitable, viz., that the Germanic races, of which our sturdy Anglo-Saxon is a branch, would long since have become extinct through the degenerating, destructive influence of alcoholic excesses, for however much the legends, traditions and history of these peoples may vary in other respects, they all agree in one particular, that from time immemorial their commonest conception and practice of sensuous pleasures were manifested in drunkenness and gluttony.

We need only to familiarize ourselves with the literature of the eighteenth century to discover that it is only since the day before yesterday, so to speak, that it has been regarded as "bad form" for a gentleman after dinner to roll, dead drunk, under the table, and later be put to bed by the servants. Now, instead of realizing the fate ascribed to such by latter-day gnostics, the record of these gluttonous, drunken men of the North is a splendid memorial of achievement along the lines of progress, civilization, enlightenment. If Shakespeare drank deeply and "trod the primrose path of dalliance" in his lusty prime, he thought still more deeply, and has transmitted to us the wisdom of *no* age, but of *all* ages, and the fadeless, imperishable flowers of genius which he gathered by the way. The fact is, these hereditary guzzlers of alcohol are the races which mainly dominate the world at the present day. From the foregoing it may be suspected that the writer is one who would continue or revive the bibulous practices of a past age. Nothing could be further from the truth.

Your correspondent has for many years endeavored *in* season, and it may be out of season, to persuade those who have never felt the fascination of alcoholic indulgence, to persist in following the *only safe road*—that of total abstinence. Personally, he has long since found that the chief and indispensable handmaid of happiness is temperance. In the cause of this latter virtue, this protest is uttered against the intemperate zeal of those whose motives are unquestionably beneficent. My endeavor at least has been to prick with my pen the bubble of fallacious teaching, when it assumes such imposing dimensions as in the present case, and especially when, as in this instance, it presents the iridescent attractions of honored names.

DAVID E. MATTESON, M.D.

Association of American Medical Colleges.

CHICAGO, Jan. 20, 1899.

To the Editor:—During the past four years, since the extension of the medical course to four years, the question of advanced standing has been repeatedly brought up by students who have taken the so-called "medical preparatory courses" in literary and scientific colleges and in private normal schools and academies. The same subject has been brought up again by the application of two literary colleges for membership in the Association of American Medical Colleges, under Article III, section 7, of the constitution of the society, which reads as follows:

A college not giving the whole four courses of the medical curriculum, and not graduating students, but otherwise eligible, may be admitted to membership.

This provision of the constitution was made to meet the requirements of the University of Colorado and the University of North Carolina. The matter now seems finally settled, and justly so, as will appear from the following decision.

DECISION OF THE COUNCIL

Denying recognition to preparatory medical instruction in certain colleges; none but regular medical colleges eligible for membership.

For final answer to interrogatories concerning the application of the Hiram College, of Ohio; the Marion Normal College and Business University, of Marion, Ind.; and other similar institutions:

First, the Association of American Medical Colleges can not accept into its membership any but regularly organized and properly conducted medical colleges.

Second, the Judicial Council of the Association of American Medical Colleges is not sufficiently informed as to the merits of the several institutions having preparatory medical courses, to justify an expression of opinion as to which, if any of them, are entitled to recognition by the Association of American Medical Colleges.

Third, the only claim for advanced standing which can be recognized by the members of the College Association must be the degree of A.B., B.S., or equivalent degree from reputable literary colleges, homeopathic or eclectic colleges, reputable colleges of dentistry, pharmacy, and veterinary

medicine, and such official credentials issued by medical colleges of equal requirements, as members may choose to recognize; excepting however, the requirements of the curriculum for the last year's work, in colleges conferring degrees.

Fourth, the practice of colleges in small towns of adding a preparatory medical department, open to all students, the entire course in anatomy, physiology, chemistry, and materia medica being conducted by one professor, is entitled to no respect, and should not be encouraged, or in any way recognized by members of the Association of American Medical Colleges.

(Signed) DUDLEY S. REYNOLDS.
ALBERT R. BAKER.
STARLING LOVING.
JOHN B. ROBERTS.
RANDOLPH WINSLOW.
JAS. H. ETHERIDGE.
VICTOR C. VAUGHAN.

Jan. 20, 1899.

BAYARD HOLMES, Secretary,
404 E. 40th Street, Chicago.

SOCIETY NEWS.

Blair County Medical Society.—The semi-centennial of this Society was celebrated at Altoona, Pa., January, 26.

John Ashhurst, Jr., Surgical Society.—By request, Dr. Alfred Stengel delivered the principal address before this Society at the recent session held at Philadelphia, Pa.

New York Academy of Medicine.—At a stated meeting of the Section on Obstetrics and Gynecology, held January 26, the following officers were elected: Brooks H. Wells, chairman; A. Ernest Gallant, secretary.

Fifth District Branch, New York State Medical Association.—The fifteenth annual meeting of this Branch will be held in Brooklyn on May 23, 1899. J. D. Bryant, president; E. H. Squibb, secretary, P. O. box 760, Brooklyn.

W. W. Keen Surgical Society.—This Society held its annual banquet at the Hotel Lafayette, Philadelphia, Pa., recently, and toasts were responded to by Drs. W. W. Keen, J. C. Wilson, H. A. Wilson, W. M. L. Coplin, H. A. Hare and Mellville B. Post.

Lorain County Medical Association.—The first annual banquet of this Association was held at Lorain, Ohio, January 31. Dr. S. S. Cox presided as toastmaster, and toasts were given by Dr. A. M. Garver, Prof. F. D. Wood, W. L. Hughes, Drs. O. B. Monosmith, F. A. Rowley and D. E. V. Hug.

Philadelphia Medico-Legal Society.—At the regular quarterly of this Society, recently, the following officers were elected: President, Dr. E. B. Wheeler; first vice-president, Dr. S. M. Heaton; second vice-president, Dr. L. H. Adler; treasurer, Dr. G. M. D. Peltz; secretary, Dr. C. H. Clewell; librarian, Dr. J. D. Nash.

Atlantic City (N. J.) Academy of Medicine.—The following officers were elected at the annual meeting, January 13: President, W. Blair Stewart; vice-president, Wm. Edgar Darnall; secretary, E. C. Chew; corresponding secretary; J. B. Thompson; treasurer, Walter Reynolds; board of governors, W. Blair Stewart, J. Addison Joy and A. D. Cuskaden.

Fox River Valley Medical Association.—At the meeting of this Association, Green Bay, Wis., January 25, the following officers were elected: President, G. T. Ford, Omro; first vice-president, C. B. Boyd, Kaukauna; second vice-president, P. J. Noer, Marinette; secretary, J. S. Reeves, Appleton; treasurer, J. J. Redelings, Marinette.

Kings County (N. Y.) Medical Society.—At the seventy-eighth annual meeting of the Medical Society of the County of Kings, held recently, the following officers were elected: President, Joseph Hunt; vice-president, E. R. Bartley; secretary, David Myerle; associate secretary, Robert J. Morrison; treasurer, Charles N. Cox; associate treasurer, O. A. Gordon; librarian, William Browning; censors, H. B. DeLatour, John E. Sheppard, J. M. Van Cott, H. A. Fairbairn, W. C. Wood; trustee, Charles Jewett.

Brainard District Medical Society.—At the semi-annual session of this Society, held in Jacksonville, Ill., January 28, the following program was given: "Medical and Surgical Treatment of Cerebrospinal Meningitis," G. N. Kreider, Springfield; "Cerebral Meningitis, with Reports of Cases," F. P. Norbury, Jacksonville; "Partial Third Nerve Paralysis," A. L. Adams, Jacksonville; "Report of Two Cases of Albuminuria," B. W. Hole, Tallula.

Clinton County Medical Society.—The recent election of officers for this Society, Lock Haven, Pa., resulted as follows: President, J. B. McCloskey; vice-president, J. M. Corson; secretary, R. B. Watson; treasurer, W. N. Armstrong; censors, Drs. Beck, R. Armstrong and Holloway; delegates to State society, Drs. Huff, Corson, Shoemaker, W. N. Armstrong and Beck; delegates to AMERICAN MEDICAL ASSOCIATION, Drs. R. Armstrong and Holloway.

Erie County Medical Society.—The annual meeting of this Society was held at Buffalo, N. Y., January 10, and the following officers were elected for the ensuing year: President, J. B. Coakley; vice-president, E. H. Ballou; secretary, F. C. Gram; treasurer, Edward Clark; librarian, Charles E. Congdon. The retiring president, Lucien Howe, read a valedictory address on "Why and How Systematic Examinations Should be Made of the Eyes of School Children."

Detroit Academy of Medicine.—At the regular meeting, January 24, Dr. Justin E. Emerson read a paper on "Notes on Heredity." After stating and illustrating the theory of evolution that the offspring will in a general way resemble the parent, the paper gave a series of experiments covering more than two years in the reproduction of Japanese waltzing mice. These mice have the peculiarity of whirling around very rapidly a great number of times, a characteristic not possessed by other breeds. One of these became crossed with a common white mouse and the offspring did not possess the waltzing quality until after about two years of careful breeding, and after six generations had been raised. The paper was given to show how atavistic tendencies will crop out after the possibility of them can not even be suspected.

Chicago Medical Society.—At the regular meeting, February 1, Dr. N. S. Davis, Jr., offered the following resolution, which was unanimously adopted:

Resolved, That the Chicago Medical Society unanimously approves the bill introduced in the Illinois Legislature by Representative Curtis, Jan. 26, 1899, to regulate the granting of charters to educational institutions which grant degrees. It is the judgment of this Society that this bill is most important, as it will help to maintain a fair standard for colleges and universities in this State, and will make their degrees more valuable.

Dr. Henry T. Byford read a paper on "The Treatment of Hemorrhoids by the Plastic Method." The author has discarded the ligature in the treatment of hemorrhoids and merely cuts them off and sews the raw surfaces together with silkworm gut, as in any plastic operation. Three or four wounds are thus sutured, a part of them in a diagonal or transverse direction in order that the lumen of the anus may not be contracted. The bowels are moved at the end of forty-eight hours and the sutures removed in two weeks. The rectum is douched out with plain water after every bowel movement. The essential features of the operation are: 1, the abandonment of the ligature; 2, the employment of silkworm gut sutures, left long and tied into bundles to facilitate removal and to guide the douche point; 3, the diagonal or transverse direction of the line of suture; 4, keeping the stools liquid and the rectum douched out. Dr. M. L. Harris read a paper on the "Relations of the Colon to Intra abdominal Tumors," which will be published in the JOURNAL.

Wayne County Medical Society.—At the regular meeting of the Society, January 26, Dr. I. L. Polozker read a paper on "Infection following Circumcision in Hebrew Children, with Report of Two Cases." The Doctor explained the Mosaic law on this question and stated that all male children are circumcised on the eighth day after birth, unless the child is sick or if the mother has lost two boys in succession from the effects of the same operation. The mayol, or man detailed to perform the operation, he said, was often a butcher, and frequently used the same knife for beheading chickens as he used for the Hebrew rite. The Doctor then described the operation of circumcision as he had recently seen it performed in the synagogue by a mayol who was of very uncleanly habits. He used an ordinary kitchen table, a glass of water containing a few drops of carbolic acid, common yellow cotton, dusted with subsulphid of iron, and a sharp double-edged knife. His hands were not even washed, and the parts to be operated on were not prepared. The mayol, seated on a chair, brought the foreskin down and removed a circular portion; then with his fingernails, he tore the mucous membrane and brought it around the glans penis; then another man, also privileged, took the penis in his mouth and sucked off the blood. The mayol then finished the operation by placing the astringent cotton around the penis and bandaging it up. During the operation some of the cotton fell to the floor, but the mayol picked it up, saying that he would use it for the next case, which was operated on immediately afterward, with as few antiseptic measures as the first. The Doctor condemned this practice in strong terms and called upon the physicians of the city to aid him in doing something to prevent the wrong to innocent children, which was so often done by dirty and ignorant mayols, describing, in support of his claim, the history of two cases he had recently treated, one for undoubted syphilis and the other for a fatal case of septic infection, both of which could be directly traced to the operation for circumcision.

Cincinnati Obstetrical Society.—At the meeting, January 12, a specimen of a double child, with complete union from the clavicles to the pubes, was presented by Dr. W. H. Taylor. The case had occurred in the practice of Dr. H. A. Beeson of Highland County, Ohio. In the delivery, the head of one child presented, and after the delivery of the body of the first child, the feet of the second child presented, followed successively by its body and head. There was no laceration or accident. The skiagraph, presented by Mr. Taylor, showed the presence of two sterni. Both children appeared perfect except for the union. No section had been made. Dr. E. Gustave Zinke presented a specimen removed from a colored girl, 18 years of age. In attempting to remove a semi-fluctuant tumor, which before operation resembled a subperitoneal fibroid, the Doctor accidentally opened up an abscess cavity. The abdomino-pelvic cavity was deluged with matter as offensive as any that may be encountered in ischiorectal abscesses. Although the operator believed the patient would die of septic peritonitis, he finished the operation as if no accident had occurred. All the growth was removed, except a portion that was firmly adherent to the bladder. That portion was fixed in the lower part of the abdominal wound. The Doctor then poured into the abdominal cavity a bottle of peroxid of hydrogen. The remarkable feature of the case was that there was no elevation of temperature, pain or other untoward symptom, and union occurred by first intention. The patient is now sitting up, after three weeks. An examination of the pus showed only white-blood corpuscles and fat, and an entire absence of the micro-organisms of sepsis.

Orleans Parish Medical Society.—At the meeting of January 28, New Orleans, La., Dr. Geo. S. Brown of Birmingham, Ala., demonstrated the application of the Hodgen splint, with some modifications of his own. Instead of the rubber adhesive strips usually attached to the thigh and leg in fracture of the femur for making traction toward the foot-piece of the splint—a not infrequent cause of itching and of boils—he uses cotton cloth strips held in place by plaster-of-Paris bandages. Cotton batting is applied to the limb up to a point about three inches above the knee, and covered first with flannel and then with plaster bandages; the strips of cotton cloth, substituting the rubber adhesive strips, are then applied laterally and secured by a second layer of plaster bandage. The splint is made of No. 4 copper wire, and may be bent over the edge of a table to the requisite shape for the individual case. The arch at the upper end of the splint is removable, not in one piece with the lateral rods; this feature permits the rods to be approximated or separated according to individual needs. The splint is attached by two adjustable straps on each side to a ring, which again is attached by a spring scale to the double rope fixed overhead. The spring permits the amount of pull exerted in different positions of the bed to be estimated, at the same time giving some play to the splint in a vertical direction. Dr. Brown claims for the splint not only great comfort to the patient but also uniformly good results, the shortening and angulation in fractures of the femur treated by this method being, in his experience, much less than when other methods are employed. It is especially useful in compound fractures of the femur, and is applicable also to lesions of the knee and to compound fractures of the tibia and fibula. The paper was discussed by Drs. Parham and Martin, whose experience with the splint had been very satisfactory.

St. Joseph (Mo.) Medical Society.—At the regular meeting, January 24, Dr. O. B. Campbell read a paper on "Ventrofixation." The Doctor advocates the operation in all cases of marked retrodisplacements, and in extreme cases of prolapsus, providing they have resisted all other forms of treatment, such as rest, position, tampons, tonics. In cases free from adhesions the procedure is simple: A two-inch incision near the symphysis, examination of each ovary, stitching the fundus to the peritoneum with two or three buried silkworm gut sutures, and closing the abdomen. In the presence of extensive adhesions, the ovaries and appendages are to be removed. Alexander's operation is only applicable in cases known to be free from adhesions. If properly done, the mortality should be nil. In the opinion of the essayist most cases of retrodisplacement which admit of replacement, can be cured by simple methods, as repairing the vaginal floor, tampons, pessaries, etc. Dr. Jacob Geiger commended the technic, but questioned the utility of the operation from the fact that when the operation is done and the uterus is large and heavy, having resisted all methods of reduction from a previous endometritis, no good is accomplished from a mere suspension; efforts should be persisted in for months to reduce the organ and, if unsuccessful, hysterectomy should follow. He urges local and tonic treatment; packing repeatedly, local depletion, with the use of strychnia and pepto mangan: operation only as a last resort. Confinement, if properly conducted, is an excellent remedy. Dr. C. H. Wallace advises the use of a number of small stitches in suspending the uterus, instead of one or two deep ones, since the difficulty with subsequent confinements is thereby reduced to a minimum. Dr. Daniel Morton entered a plea against the indiscriminate use of the pad and binder after confinement. In his opinion it is a frequent cause of retroflexion. Dr. Edam prefers in such cases of relaxation, some of the recent intra-abdominal methods—Beck's or Wiley's—of folding the elongated ligaments and stitching them through and through. These methods promise more for future confinements in facilitating normal labor. Dr. S. D. Senor reported a case of septic fulminating cellulitis following chickenpox. During convalescence from the latter condition, a slight injury was received upon the left hip, resulting in a mere bruise; within twenty-four hours discoloration and edema spread to the knee, accompanied with a subnormal temperature. In three days entire lower extremities became cyanotic and partially black and death ensued. Temperature remained subnormal until death. Dr. J. B. Riley uses antistreptococcus serum in such cases, which if used early prevents the rapid spread and profound depression.

Philadelphia Pathological Society.—Dr. Henry L. Williams presented specimens and sections of "Papilloma of Both Ovaries and Ascites," which had been removed from a patient of middle life. Dr. Wilmer Kruzen spoke of a case of a similar nature in which the papillomatous growths had been completely removed and a year later the growths had recurred. He wanted to know the prognosis in these cases. In reply Dr. Williams stated that there generally was a recurrence of the tumors and that the prognosis was unfavorable. Dr. A. C. J. Kelly read an interesting paper entitled "Some Remarks upon

Histologic Technic with Demonstration of Apparatus." While not being opposed to the generally accepted teaching of the value of the paraffin method, Dr. Kelly preferred imbedding in celloidin for general use. From the photographs of the apparatus used, he explained the ease with which the celloidin might be kept fluid and clear for many months. He prefers a glass jar with a tightly fitting cover, in the bottom of which is placed a few pieces of crushed calcium chlorid, and on a wire wick the celloidin and other material is placed. The whole is tightly closed with an accurately fitting cover. Dr. Stilwagon spoke of the celloidin and paraffin methods of imbedding. Dr. H. W. Cattell spoke of an apparatus much used in England in which the imbedding was carried on in an air-tight chamber through which the vapor of alcohol was being distilled. Dr. W. M. L. Coplin said that he had tried the method spoken of by Dr. Cattell, and that in consequence his laboratory had sustained a damage of $2000 by the explosion of the apparatus. Of the different methods of imbedding, he preferred the paraffin method because of the facility with which the specimens might be mounted and the thinness of the sections which might be cut. Dr. David Riesman stated that the paraffin method was the one generally employed at the University of Pennsylvania, although he thought the celloidin method had certain advantages, especially since it did not consume so much alcohol, which was quite an item in all laboratories. Dr. A. E. Taylor read a paper entitled "Note on a Possible Urinary Test for Obstruction of the Pancreatic Duct." Dr. Taylor instanced a case treated by the late Dr. William Pepper, in which there was total occlusion of the bile-duct and also of the pancreatic duct. In this case the ethereal sulphates had fallen to one-fourth of what they should be normally, and he thought from this fact a possible diagnosis might be derived in cases of obstruction of the pancreatic duct. Drs. W. S. Wadsworth and Charles W. Burr presented skiagraphs of tabetic arthritis, and several specimens. Dr. Lawrence, for Dr. F. R. Packard, read a paper and presented a specimen of cancer of the stomach, liver and pancreas. The mucous membrane of the stomach was nodulated and the left lobe of the liver showed localized infiltration, whitish in color, but without any distinct nodules which might be felt externally.

PUBLIC HEALTH.

Detroit Health Report.—For the week ending February 4: Births, male, 45, female, 45; deaths, 121, under 5 years, 37. Contagious diseases: Diphtheria, last report 11, new cases 7, recovered 2, died 2, now sick 14; scarlet fever, last report, 34, new cases 2, recovered 9, none died, now sick 27; smallpox, last report 4, no new cases, 1 recovery, none died, now sick, 3.

Mortality Among Russian Troops in China.—According to a dispatch from Port Arthur, dated January 27, the Russian post in the Liau-Tong Peninsula of China reports a great mortality list, due to bad water. Two hundred and fifteen died during the months of November and December, and the average mortality is now four deaths daily.

Health of Denver.—The December, 1898, report of the Bureau of Health gives the annual death-rate as 13.29 per 1000; excluding phthisis contracted elsewhere, 10.28 per 1000. The mortality for December exceeded that of November by 5 deaths, but was 5 less than for December, 1897. Tuberculosis caused 54 of the 185 deaths, pneumonia 21, heart disease, 13, and nervous diseases 20. One death was accredited to rabies—the first such in Denver—but it was not demonstrated by post-mortem.

Health of New York for 1898.—During the year, 120,992 deaths were reported, 3894 more than in 1897. The death-rate per 1000 was 18.10, the average for the past ten years being 18.25. The infant mortality was greater than in 1897, by 2300, though relatively decreased, "constituting 30.2 per cent. of the total, against 32.5 last year, and an average of 33.5." Diphtheria caused 2620 deaths—the fewest of any year on record. Consumption caused 12,000 deaths, and la grippe 2500.

Health in Michigan.—Reports to the State Board of Health for January, 1899, give influenza, rheumatism, bronchitis, neuralgia, tonsillitis, pneumonia, diarrhea, pulmonary tuberculosis, and pleuritis, as the most prominent causes of deaths during the month. Compared with the January average for 13 years, influenza was more prevalent, and intermittent fever, diphtheria, whooping-cough, consumption, erysipelas, and inflammation of the bowels less prevalent.

Smallpox in Cuba and Porto Rico.—Too much credit can not be given to the medical officers of the occupying army of our recent acquisitions. Their energy has been conspicuous in the matter of compulsory vaccination, backed by more than the consent of the military arm of the service. In Havana, on January 30, 160 cases of smallpox were reported and in San Juan, Porto Rico, 150. These conditions in both places are not unusual, and create no comment among the natives.

A Vaccin Farm in Porto Rico.—Major John Van R. Hoff, chief surgeon of the Department of Porto Rico, has recommended that everyone on the island be vaccinated, and the Commanding General, Major-Gen. Guy V. Henry, has approved the recommendation and issued the necessary orders. His General Orders No. 1 of Jan. 3, 1899, state that "the orders requiring vaccination will be executed in all municipalities. Boards of Health will report failure to obey these orders, and alcaldes will see to the punishment by fine or imprisonment of persons who fail to comply with the orders of the Board of Health." A vaccin farm is now being established, under the immediate supervision of the chief surgeon, by Dr. Azel Ames, acting assistant-surgeon, and it is believed that all the virus necessary to vaccinate the entire population can be provided at small cost.

Sale of Patent Medicines in Switzerland.—No secret or patent medicines can be sold in a canton without the certified permission of the local Board of Health, not even to physicians. No pamphlets can be distributed advertising the self-cure of diseases or treatment by correspondence except under the same conditions. Pamphlets recommending female regulating or anticonception measures are forbidden altogether. To obtain the permit for the sale, the medicine must be submitted to the Board of Health with the formula, price and other details, and the question is finally decided by a committee representing each canton, which decides upon its harmlessness, whether the prospectus is misleading, or the price exorbitant in proportion to the expense of manufacturing, etc. The permit can not be used in any way as an advertisement.—*Deutsche Med. Woch.*, January 5.

Anti-Vaccination in California.—We learn that at Los Angeles, Cal., the opponents of vaccination have held a meeting preliminary to organizing and sending a representative to Sacramento, so that their petition to the legislature for the repeal of the compulsory vaccination law may not be neglected. It will be his duty to stand by the representative who presents it, be ever diligent that the end sought for may be attained, and, above all, to accept no compromise. At the close of the regular program the meeting was given over for the purposes of general discussion. The suggestion of one auditor that, in case their efforts fail, all present withdraw their children from the schools, was received enthusiastically by those present. At the next meeting the anti-vaccinationists will perfect a permanent organization, elect officers and appoint the various standing committees.

A Healthy Record at Chickamauga Park, Ga.—According to the *Sunday Times* of Chattanooga, Tenn. (January 29, 1899), the Eighth Regiment U. S. Vol. Infantry (Immunes), Col. E. L. Huggins, commanding, and Major James H. Hepburn, surgeon, has had a most unusual record during its stay in Camp George H. Thomas. A letter from Dr. Hepburn states that the average number of men present with the regiment from Oct. 9, 1898, the date of arrival, to Jan. 20, 1899, was 1150, and since the latter date 950. During the 111 days of the encampment

there were treated in the post hospital a total of 118 separate cases, of which 31 were measles, 7 gunshot wounds, 40 were due to the imprudence of the patients, and the remainder nearly all due to grip. Since the first day of the organization of the first company of the regiment, June 1, 1898, there has not occurred a single death from disease, in the regiment, nor among the troops attached to the regiment for service, and the only death from any cause was the accidental drowning of a man in the Ohio river, last July. Not a single case of typhoid fever occurred among the men since their encampment at Chickamauga. None of the diseases treated in the camp could be traced to the water-supply.

The Smallpox Epidemic.—The smallpox epidemics of this winter appear to be limited to a comparatively small number of localities so far. The most formidable outbreaks are amongst the Zuni Indians of New Mexico and the tribes in Oklahoma and the Indian Territory. Of the first named tribes, numbering altogether about 1700, there were reported 600 cases on January 25, and 217 deaths had already occurred. In Oklahoma and the Indian Territory smallpox is said to be destructive among the Kaw, Cheyenne, Kickapoo, Crete and Seminole tribes, and it is vaguely stated that hundreds of deaths have already occurred. Elsewhere, scattered local epidemics are reported from several points in California, Nebraska, Kansas, Ohio, Iowa, Arkansas, Kentucky, Mississippi, Tennessee, Missouri, Virginia and Pennsylvania, and along the Mexican border in Texas, and are elsewhere noted as prevailing extensively in Alabama. The causes of these local epidemics are not always clear, but in some the disease has been traced to railway employes and soldiers in barracks, and Dr. Benjamin Lee, secretary of the Pennsylvania State Board of Health, is reported as attributing it to a Cuban source, while the Marine Hospital authorities in Alabama appear inclined to think the disorder there has some other source. It is certain that with all these separate foci of infection there is danger, especially in the great railway centers, of a spread of the disease unless the health authorities are fully alive to the situation and take the precautions necessary. With more frequent and intimate intercourse with the Spanish-American population of Cuba, Porto Rico and the Philippines, where smallpox has been allowed to prevail unchecked, the chances of its introduction are multiplied until sanitary regulations are extended over those countries and the evil is checked at its source.

Smallpox and Legislation.—Dr. R. D. Murray of the United States Marine-Hospital Service calls attention to the following state of affairs: The State of Alabama has, it appears, been badly infected with smallpox for several years past, the total number of cases rising, according to some estimates, well up into the tens of thousands. The anti-vaccination sentiment seems to be well disseminated, and with the policy of concealment, to be largely responsible for the present unfortunate state of affairs. The State Health Officer, Dr. W. H. Sanders, has, in view of the present conditions and the discredit they are likely to bring to this State, issued a circular to the medical profession asking their influence in favor of a couple of bills that are now before the legislature and which are designed to improve matters in this regard and to deal efficiently with the disease. One of these bills provides for the vaccination of the pupils attending the public and private schools throughout the State, and the other for the suppression of an actual outbreak of smallpox by making general vaccination compulsory whenever the County Board of Health declares it necessary, the said Board being on the ground, and therefore, in the best position to judge as to the necessity of such a course. The two bills therefore supplement each other, the one aiming at the ultimate extinction of smallpox by general vaccination and the other the suppression of whatever local epidemics may occur. It appears from the circular that there is an active anti-vaccination agitation in opposition to these bills, and Dr. Sanders therefore gives the historic and rational arguments in favor of vaccination as a protection against smallpox very fully and ably in his paper, which is in its way a very forcible document, and should have its due influence with the legislators and the public. It is to be hoped that the school laws are sufficiently comprehensive and thoroughly enforced to make the first-named measure in time a full and adequate protection, and that there may be no morbid sentiment sufficiently strong to prevent or postpone the passage of this very necessary legislation. Alabama has not been heretofore notably behindhand in enlightened medical legislation, and it will be a serious misfortune to the State if the traditions of the past in this regard are not to be respected in this important matter.

Health Reports.—The following cases of smallpox, yellow fever, plague and cholera have been reported to the Supervising Surgeon-General of the U. S. Marine-Hospital Service for the week ended Feb. 4, 1899:

SMALLPOX—UNITED STATES.

Alabama: Clarke, Clay, Dallas, Greene, Hale, Lowndes, Marengo, January 27, smallpox present; Mobile, January 1 to 27, 7 cases; Randolph, Wilcox, smallpox present.
Arkansas: Pulaski Co., January 27, several cases, 1 death.
District of Columbia: Washington, January 14 to 21, 1 case.
Illinois: Cairo, January 27, 3 suspicious cases.
Indiana: Indianapolis, January 22, 3 cases; origin unknown.
Kentucky: Louisville, January 23, 1 case; on river steamer.
Michigan: Detroit, January 7 to 14, 7 cases.
Mississippi: Clay Co., Jones Co., January 27, smallpox present; Hattiesburg, Perry Co., January 27, 17 cases in pest house; Lauderdale Co., Noxubee Co,, Tisbomingo Co., smallpox present.
Nebraska: Omaha, January 17 to 22, 7 cases.
New Jersey: Jersey City, January 15 to 22, 2 cases.
New York: Dunkirk, January 14 to 21, 2 cases.
Texas: Laredo, January 14 to 21, 37 cases; 8 deaths.
Virginia: Alexandria, January 23 to 29, 47 cases; Portsmouth, January 27, 16 cases; Richmond, January 25, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, January 1 to 7, 4 cases; 1 death.
India: Bombay, December 20 to 27, 2 deaths; Calcutta, December 10 to 17, 1 death.
Mexico: City of Mexico, January 15 to 22, 1 death.
Nova Scotia: Halifax, January 28, 1 case; among Russian immigrants.
Russia: Moscow, December 24 to January 7, 20 cases; 5 deaths; Odessa, January 1 to 7, 1 case; 1 death.
Turkey: Constantinople, January 2 to 9, 14 deaths; Smyrna, December 25 to January 1, 2 deaths.

YELLOW FEVER.

Columbia: Barranquilla, January 2 to 9, 1 case, 1 death.
Mexico: Vera Cruz, January 12 to 19, 2 deaths.

PLAGUE.

China: Hongkong, December 10 to 17, 1 case; 1 death.

CHOLERA.

India: Bombay, December 20 to 27, 2 deaths; Calcutta, December 10 to 17, 16 deaths.

Unsatisfactory English Sanitary Administration.—A classic paper on local sanitary administration in England and Scotland has appeared in *Public Health* (October), from the pen of Dr. Campbell Munro of Paisley. He introduces his survey of the sanitary field of his country by saying: "A recent American writer has observed that English local government is a most conglomerate circumstance. It reminds one," he says, "of the old manor house which the traveler meets from time to time in England—a building which has quite lost its identity, because of the modifications introduced to suit the fancies of succeeding generations. The most violent architectural contrasts strike the eye, for each owner, while adding something to gratify his own taste, has left intact as much as possible of the earlier work. So with local government, incongruity is the rule. And the queer mingling of the archaic with the modern is explicable here, as in the manor house, not on utilitarian, but on historic grounds." Still the central administration of public health affairs in England remains a thing of shreds and patches. What is required is a ministry of public health, detached from any relationship to poor law administration. Under this ministry would be grouped the ordinary public health administra-

tion of the country, the Factory and Workshop and the Burial Grounds Departments from the Home Office, the Veterinary Department from the Privy Council, and the Registrar-General's Department—in more intimate relation than it at present has with the Local Government Board. Then there would disappear the unedifying spectacle of two Government departments in hostile conflict, as in the case of the Veterinary Department of the Privy Council and the Medical Department of the Local Government Board. Then, too, there would be hope of the resolution of the chaos existing in the health administration of the Factory Acts, and of a proper definition of the spheres of action of the officers of the central and of local authorities. In the codification of the Factory and Workshop Acts which is talked about, the draughtsman of the measure should certainly have in contemplation the detachment of the Factory Inspection Department from the Home Office, and its establishment as a Department of the Local Government Board.

Immunity Against Tropic Fevers.—One comparatively unnoticed observation made by Prof. Koch during his studies in Africa and India is that women withstand exposure to malarial climates far better than men. "During the appalling mortality on the Gold Coast, within the past four years," says the report, "there was hardly a death among the women living out there, while every kind of man was dying—men new to the tropics, men born in them, men who had been accustomed to them for years, even men who had battled with the ravages of West Africa for upward of ten years." The attempt to explain this anomaly by the fact that men are, as a rule, more exposed to the hot sun of day and the miasma of night, failed in presence of the fact that the death-rate was highest among officials, merchants, and employes who work in offices, banks and warehouses, where no exposure to weather is involved and where medical attendance, food and all conditions of living are the best obtainable in that country. The fact that black-water fever, so deadly to male Europeans, seldom attacked women, and that no physician has yet offered any reasonably conclusive explanation of such discrimination, illustrates how far medical science is yet from a full understanding of malarial disease and how long and difficult a road is still to be traversed before the risks incurred by northern civilization in the effort to reclaim and civilize the tropics will be reduced, through exact knowledge and scientific practice, to a minimum. The subject is certainly so important as to invest with world-wide interest the efforts that Germany is now making under the lead of her foremost bacteriologist to reach a clear understanding of, and more potent mastery over, the scourge which now makes desert some of the fairest and most fertile portions of the earth. —*Consular Reports*, December.

Precautionary Measures Against the Plague.—In the *Journal of State Medicine*, Dr. Beveridge, formerly a member of the Poona Plague Committee, says: "Of all sanitary measures, that of the first importance is cleanliness. Plague is essentially a filth-borne disease. Where epidemics have occurred lately, the European community has suffered in far less proportion, doubtless from their cleaner habits and more sanitary surroundings. It is not sufficient to put the house in order on the appearance of the plague, but to have it so long before it arrives. All histories of plague point to the presence of insanitary conditions; the worse these conditions the more firmly the disease takes hold. In Sai-Ping-Shan, in Hongkong, whole families of human beings, together with dogs, pigs and fowls, herd together in closely confined rooms, with little or no light or ventilation. The floors lay inches deep in filth, akin to the rush-strewn floors described in the history of the plagues of England, where substrata of fermenting organic matter lay long undisturbed, the refuse of ages, forming a suitable resting-place and cultivating-ground for the plague bacillus in all its requirements. So bad was the stench that many were driven to seek refuge in the open air, vomiting as they went. Among those exposed to infection the importance of personal cleanliness need only to be alluded to. The clothes should be frequently changed and exposed after wear to the sun's rays or to moist heat. It is now well known that plague is frequently the result of inoculation, and can gain entrance to the body through abrasions of the surface, either mucous or cutaneous. It has been thought that a possible cause of infection among natives is by the habit of going barefoot, whereas the European, being well booted, is less susceptible, but there are many other factors to adduce for this lessened susceptibility. Those suffering from abrasions, wounds and ulcers should avoid proximity to the disease. From March to May, 1897, over 900 soldiers were employed in Poona combating the plague, and the most careful precautions were considered necessary to protect them. Before starting work in the morning each man had a good meat meal. No man was allowed to go out who had any cuts or abrasions, and all cases of slight ailments were detained in camp. Immediate disinfection by antiseptic solutions, carried with them, of all cuts and bruises contracted during their work, was resorted to. On return to camp their clothes were exposed to the sun's rays for the rest of the day. As a result it is gratifying to record that there were no cases of plague among them."

Bacterial Treatment of Sewage.—In connection with the discussion of this subject before the Society of Engineers of London, Mr. Baldwin Latham said that it could now be looked upon as an accomplished fact that the sewage of towns can be bacterially purified before it goes into the water-courses. The progress made in the last two years has shown to him that those who are working up this subject are indeed public benefactors, deserving the best thanks of the community, for not only do they present an efficient method, but one that has obviated large expenditures for chemicals. At the same session. Mr. Thudicum presented a practical paper, in order to illustrate the outcome of a vast amount of experimental work, and more especially to show how the system could be adapted to meet local requirements in various cases. It is now evident that the general principle of biologic treatment in one form or another is acknowledged by the majority of those practically concerned in the disposal of waste matters, the doctrine being generally accepted. In attempting to apply the biologic method to the treatment of sewage of any given place, three questions of paramount importance had to be considered: 1, the available fall, 2, the nature of the soil, and 3, the possibility of the sewage containing ingredients which are hostile to microbial life. He then described the special uses of different processes under varying local conditions, and gave in detail the method adopted at Worcester Park, where the Cheam and Cuddington sewage is received, to convert a process of precipitation and irrigation into one of bacteria bed treatment and irrigation when desired, He showed how the necessary beds were constructed by excavation and filled with burnt ballast, produced on the farm at a total cost of about $1600, the quantity of sewage to be dealt with amounting to 80,000 gallons daily in dry weather. He also alluded to the conversion of the Sutton sewage works, the cost there having been something less than $1000 for a daily flow of 500,000 gallons of sewage, whilst the saving in working expenses was $2500 per annum. Having discussed the general questions of the interception of road detritus, the catching by screens of pieces of rag and any large floating matter, he dealt with night sewage and its treatment by the provision of a special bed for its reception, with siphons for automatic emptying of the bed in case of storm. An important point in connection with sewage treatment by any method was to minimize the attention required; at Sutton, night attendance was obviated by providing a pair of beds, coarse and fine, each having a water capacity sufficient to take the whole of the night flow. For dealing with sewage from a small community, such as a public school, an asylum or a small hamlet, one or two biologic methods could be employed, according to the fall available. In the first, which might be either the Sutton or Exeter system, or a combination of the two, the sewage is passed continuously through the tank

or for twenty-four hours on to a coarse bed, and then on to fine beds, where it remains for two hours and is then discharged. The attendance required is slight. In the second case, where the sewage can not be delivered near the surface, a storage tank is provided, a coarse grain and a fine grain bacteria bed, each being capable of containing the sewage of twenty-four hours. At a fixed time each day the sewage should be pumped from the storage tank into the coarse bed, remaining for two hours, and then be passed to the fine bed, and after two hours be finally discharged.—*Sanitary Record*, Dec. 9, 1898.

The Village Heroes of the Black Death.—The deplorable laboratory incident at Vienna has again called to mind England's last and most pathetic experience with the plague. This was the outbreak in 1656 in the little village of Eyam, in Derbyshire, which has passed into both medical and heroic literature, from the deadliness of the disease and the noble spirit displayed by its victims. The contagion was introduced by a box of cast-off clothing sent to the village tailor and afterward discovered to contain garments of those who had died in the epidemic of three years before. The tailor, his apprentice, and two members of his family were the first victims, and as the disease appears to have been of the pneumonic type, which it assumed in the cases of Dr. Mueller and Nurse Pecha, it was not recognized until a number of deaths had occurred and the little community was fairly saturated with the contagion. The first thought of the villagers was to find safety in flight, but this was checked by the rector of the parish, the Rev. Charles Mompesson, a man of remarkable intelligence and noblest courage. He called the terrified people together in the churchyard and begged them to recall their duty to others and, if need be, to die like martyrs. He pointed out that as nearly every family had been exposed to contagion, flight would not probably save them from attack, but would certainly result in spreading the disease all over the adjacent counties, and ultimately the whole north of England. He therefore urged them to sacrifice themselves for the good of their country and to stay quietly in their own homes and little fields until the disease should have spent its force and died out. It was heroic counsel, but to the everlasting honor of the English peasantry, it was accepted upon one condition, that he stay with them to bury their dead. He replied that he had had no other thought or intention, whatever the mass of them might do, and the little assembly dispersed quietly to their homes to await the will of God. A line was agreed to along the crests of the little valley in which the hamlet lay, and across its trough above and below, beyond which none were to go, and Mompesson sent word to influential friends of his that if the authorities would supply them with food the villagers would stay quietly at home. For no less than thirteen long months, from Sept. 6, 1665, till Oct. 11, 1666, the pestilence raged among those noble mountaineers. They fell one after another, till when in the second autumn it died out for lack of fuel, out of 350 souls only 89 survivors stared in each other's haggard faces and wondered whether after all the dead were not more fortunate than they. But their courage never faltered; every day they went to an appointed place on the boundary line, to bring back the food which had been left there, but not one of them crossed it to escape from the charnel-house. And their fearful sacrifice was not in vain, for not a single case of the disease occurred outside the stricken valley. Mompesson himself survived, but his devoted wife, whom he had vainly urged to leave him before infection had been brought into their home, was among the dead. Remembering the 60,000 deaths in London alone in one epidemic, it was almost certainly a sacrifice of a few hundred lives to save thousands, but those few hundred lives were their own and those of their dearest. It is one of the noblest instances of self-imposed quarantine and martyrdom for the good of others upon the pages of history, and a memory of pride to the entire Anglo-Saxon race. A faint regretful odor clings about the memory for us as a profession, which finds expression in the half wondering question, "where was the doctor?" There was, of course, no local physician or any one so situated as to make it in the slightest degree obligatory, even in the sense of *noblesse oblige*, upon him, to consider that village as his post of duty, and yet, our brotherhood has seldom needed an example in that sort of devotion, and here there were three hundred. True, he could not have hoped to save many lives, for the medicine at that day was utterly helpless in the face of the "Black Death," but to think of those brave villagers and their devoted minister fighting the dread enemy alone is pitiful. Everything that the medicine of the day could suggest was carried out by the tireless rector. Houses and streets were cleaned of their filth, infected clothing and bedding were burned, and even some attempt made to save the water-supply from contamination. So alive was he to the danger of contagion that he abandoned his church and held all religious services in the open fields. Indeed, so thoroughly was the destruction of the bedding and clothing of those who had died carried out that when the plague finally died down at the beginning of the second winter, there were not enough blankets in the village to keep even the handful of survivors from suffering severely during the first cold nights (vide JOURNAL, Dec. 31, 1878, p. 1598).

NECROLOGY.

JAMES F. SULLIVAN, M.D., San Francisco, Cal., died January 24. He was born in Roxbury, Mass., May 18, 1838. After graduating from Harvard he went abroad and spent considerable time in the colleges and hospitals of London, Paris and Dublin, but was recalled to this country earlier than he had expected, by the demands of patriotism. He enlisted in Boston in the Ninth Massachusetts Regiment, and with it joined the Army of the Potomac. He saw service in twenty-seven battles. At the close of the war he made his residence for eleven years in Chicago, going to San Francisco in 1875.

KENNETH F. MACLELLAN, M.D., Glasgow, 1867, died at the home of a patient, from cardiac disease, January 29. He was a resident practitioner of New York City, and came to this country from Scotland, about thirty years ago.

EUGENE CARROLL SKINNER, M.D., Detroit, Mich., died January 24, at his home. Dr. Skinner, the son of a Universalist minister of renown, Dr. Dolphus Skinner, was born in Utica, N.Y., 57 years ago, and came to Detroit in 1867. Until his death he was closely associated with the best interests of the city in the circles of science, literature and philanthropy, as well as a conspicuous figure in its business life. He was a graduate of the Detroit College of Medicine of the class of 1887, also of Tuft's College near Boston, and of the law and medical jurisprudence classes of Columbia College. His war record was honorable; he was in service with the 117th New York, in which he enlisted, and of which he became captain. Mrs. Skinner and one daughter survive the Doctor.

M. T. BASCOMB, M.D., Pleasant Grove, Minn., was buried at Rochester, January 31. . . . R. H. Gillen, M.D., Wabash, Ind., died at DeLand, Fla., January 22. . . . B. F. Goodson, M.D., Hopkins, Mo., January 28, aged 47 years. . . . H. D. Griswold, M.D., Sherman, Mich., January 30, of pneumonia. . . . L. F. Humeston, M.D., Highland Springs, Va., February 2, aged 74 years. . . . Jacob B. McNett, M. D., Grand Haven, Mich., February 1, aged 83 years. . . . W. S. Mendenhall, M. D., Springfield, Ill., January 25, aged 51 years. . . . J. F. Moorehead, M.D., Joplin, Mo., January 26, aged 45 years. . . . W. H. Nance, M.D., formerly of Gunnison, Miss., late of Nashville, Tenn., January 26. . . . G. M. Raney, M.D., Smoky Ordinary, Va., January 24. . . . Richard M. Slaughter, M.D., Belton, Mo., January 25, aged 64 years. . . . Frederick A. Veeder, M.D., Utica, N. Y., January 26, aged 71 years.

MISCELLANY.

Dr. N. Senn.—Prof. Nicholas Senn, Chicago, returned February 1 from a vacation spent in the South.

Dr. Edward Aldrich.—Dr. Edward Aldrich of Buffalo, N. Y., has been appointed junior assistant physician at the Buffalo State Hospital.

Bequest to Hospital.—The Leonard Morse Hospital, East Cambridge, Mass., is to receive $5000, by the will of Edgar S. Hayes of Natick, for the establishment of a free bed.

Meharry Medical College.—The twenty-third anniversary of this college was celebrated February 1, and a class of thirty-nine graduated in medicine.

"Woman's Medical Journal."—Dr. Mary E. Bates of Denver, Colo., will hereafter have charge of the department of surgery in the *Woman's Medical Journal*, Toledo, Ohio.

"Southern California Practitioner."—With the January number, this Los Angeles, Cal., medical monthly came again, after a lapse of ten years, under the editorial management of Dr. Walter Lindley.

New Medical College.—It is announced that the Board of Trustees of the Ohio State University has decided to create a medical college in connection with the University.

"Medical Times and Register."—This Philadelphia publication announces that it will hereafter appear monthly instead of semi-monthly, with an increase of pages and the subscription price reduced to $1 a year.

"International Medical Magazine."—We notice that this publication has passed into the hands of Messrs. E. B. Treat & Co., New York City. Dr. Boardman Reed of Philadelphia, however, will continue as editor-in-chief.

Dr. J. C. Corbus.—The trustees of the hospital for the insane, Kankakee, Ill., have elected Dr. J. C. Corbus, president of the State Board of Charities, as superintendent, to succeed Dr. W. S. Stearns, resigned.

St. Luke's Hospital Staff.—The directors of this San Francisco Cal., institution have appointed the following physicians and surgeons for the ensuing year: Washington Dodge, Clark J. Burnham, Herbert Carolan, J. C. Kenyon, Charles B. Brigham, W. H. Mays, Samuel G. Boyd, George H. Powers.

Surgeons-General of National Guard.—Dr. John V. Shoemaker, Philadelphia, Pa., has been appointed Surgeon-General of the National Guard of that State, and a similar honor has been conferred on Dr. A. J. Stone of St. Paul, Minn., who has been appointed by the governor of that State, to succeed Dr. J. F. Fulton.

Chicago Physicians Lecture.—In the course of lectures being given under the auspices of Northwestern University, the University of Illinois Medical School and the Chicago Board of Education, Dr. Adolph Gehrman recently lectured on "Applied Bacteriology," with stereopticon illustrations; Dr. Bayard Holmes on "Child Growth," and Dr. W. A. Evans on "Tuberculosis."

Hendryx Laboratory.—This laboratory, the gift of Dr. W. A. Hendryx, Los Angeles, Cal., to the Medical College of the University of Southern California, was recently dedicated with appropriate ceremonies. Dr. C. L. Bard of Ventura, president of the California State Medical Society, delivered an address on "The Knowledge of Pathology," and Dr. H. G. Brainerd, dean, the address of acceptance.

College of Physicians and Surgeons.—We learn that Dr. Felipe Kreissl has accepted the professorship of surgery in the College of Physicians and Surgeons, Chicago. He is a native of Vienna and studied in the Imperial Royal University Medical College, practicing four years in the surgical clinics of the hospitals of Vienna immediately following his graduation. He came to Chicago in 1892.

Rush Medical College.—We learn that this medical school, beginning with July, 1899, will be in session the year round, on the quarterly system in vogue at the University of Chicago, with which University Rush Medical College is in affiliation. This innovation will probably require an addition to the force of instructors and teachers, as the future policy is to greatly increase the clinical teaching.

Cook County Hospital.—Concerning recently proposed changes in the appointment of internes for the Cook County Hospital, Chicago, we learn that the physicians have carried the day and the examination will be conducted by the method that has obtained for years. The examining physicians have agreed to forward the papers of applicants to the Civil Service Commission and to allow the Commission to have supervision over the internes.

Hernia Uteri Inguinalis.—Saenger reports the case of a female teacher operated for a tumor in the left inguinal region, which was found to contain a rudimentary uterus and tubes, with a testis only recognized with the microscope; no indications of a vas deferens, seminal vesicle or prostate. There are only eleven cases on record of hernia of the nongravid uterus. Veit collected seven cases of nongravid and eight cases of gravid hernia uteri inguinalis.—*Cbl. f. Gyn.*, 1898, 51.

St. Louis Baptist Hospital. We are informed by the secretary that on January 6 the following-named gentlemen met and organized the staff of the hospital: Dr. Bransford Lewis, president; Dr. John Young Brown, vice-president; Dr. John A. J. James, secretary; Drs. C. C. Morris, Robert Barclay, J. W. Williamson and John C. Mortit. In the future all matters concerning the medical policy and ethical conduct of the hospital are to be under the control of the medical staff, and it is the policy of the staff to conduct the hospital in the most ethical manner possible, free from prejudical alliances, and impartial as to colleges, religion, politics or individuals.

The Liver in Infections.—Roger has confirmed d'Amato's assertions in regard to the disappearance of glycogen from the liver toward the close of anthrax infection. He has also established that sixty-four times the fatal dose of anthrax culture can be injected into the portal vein of a rabbit without injury, as the liver destroys the germs that reach it; even six to eight times a fatal dose of staphylococcus aureus. This protecting action of the liver is less pronounced if the animal is fasting. He has also established that small amounts of either sugar or ether promote this protecting action of the liver, while, on the other hand, large amounts annul it.—*Presse Méd.*, Dec. 21, 1898.

Sanitary Restraints in Swiss Schools.—The evils of overwork have claimed, in the case of school children, the attention of the Swiss officials. In the Canton of Luzerne repressive measures have been adopted, especially in the case of the six classes of the primary schools. The provision is that no lessons shall be studied at home, and that only moderate tasks be required in the secondary schools. In regard to intervals, ten-minute recesses every half hour are called for, and a week's vacation every six or seven weeks. Especially commendatory is the requirement that the attendance at school is not to begin before the age of 7 years.

Abscesses in Buchara.—Finkelstein describes in *Wratsch*, 1898, 43, the frequency of large abscesses among the poorer population of Buchara, forming 4 per cent. of the 30,000 patients treated in the hospitals during the past five years. It is most frequent between 18 and 35 years of age. Sometimes there are as many as ten to fifteen abscesses scattered over the body, although Scarpa's triangle seems to be the favorite site. Five to six pounds of pus are evacuated from some abscesses. The general health does not seem to suffer much except in case of extreme debility. Fraenkel's pneumococcus, the staphylococcus aureus and albus were noted almost constantly in the pus and blood. The affection does not seem to be contagious, but to be favored by the inconceivably unsanitary and unhygienic manner of life.—*Derm. Ztft.*, December, 1898.

Congenital Stenosis of the Pylorus.—M. Pfaundler noticed that the pylorus was strongly contracted in a number of infants' cadavers he was examining, and he has become convinced that this condition in life has been erroneously entitled congenital stenosis of the pylorus. He found that this congenital stenosis

never occurred until some months after birth, and that it frequently disappears spontaneously in the course of a few weeks. It should therefore be attributed, not to hypertrophy, but to a spasmodic contraction of the pylorus. This hypothesis agrees very well with the exaggerated excitability of the gastric mucosa in infants, indicated by the facility with which they vomit; it is easy to understand a reflex contraction of the pylorus in case of digestive disturbances causing the formation of irritating products. The syndrome, therefore, of constriction of pylorus is not an anatomic lesion, but a spasmodic contraction of the pyloric ring, of functional origin.—*Vienna Klin. Woch.* Nov. 10, 1898.

New Publications.—The *Western Clinical Recorder*, published at Chicago, is the latest applicant for editorial commendation, and the initial number, published in January, promises very much for the success of this new medical bi-monthly. It will be conducted by Drs. F. J. Hodges and W. T. Rinehart, and is "designed to familiarize the general practitioner with the practices and methods obtaining in the leading public and private hospitals of the land." . . . *Merck's Archives*, New York City, Vol. i, No. 1, Jan. 18, 1899, a new monthly publication of materia medica and its uses, has been received. The subscription price of each of these publications is $1.00 per year.

Histopathology of Affections of the Nails.—J. Heller mentions in the course of a study of this subject, in the *Derm. Ztft.* for December, the surprising results he obtained with modern staining methods with the finger of an Egyptian mummy, after dissolving out the asphalt with ether and decalcifying the nail. The nuclei did not take the stains, but the other tissues stained so remarkably well that it was almost impossible to convince beholders that the tissues were several thousand years instead of a few days old. He made the discovery that the peripheral nerves and the medullated nerve terminals presented nothing abnormal in a case of clinically established injury to the nerves with manifestations of trophic nerve disturbances: glossy skin, onychogryphosis.

Phantom Tumor of the Abdomen.—Schnitzler found upon repeated examinations of the abdomen of an hysteric woman aged 35 years, a tumor in the pyloric region. The tumor was the size of a small apple, movable, though not moving much with respiration, and painful on pressure. It was not present at all examinations. Laparotomy was performed and the stomach appeared normal, although the pyloric muscular apparatus was somewhat thickened. Suddenly under the eyes of the operators a tumor developed about 3.5 inches long and 2 inches wide, extending upward from the pylorus. This subsided in forty five seconds, but reappeared some minutes later. A pyloroplasty was performed for the relief of the ulcer believed to be present, on the general principle that sphincter muscles are stretched for suspected fissures.—*Medical News*, Dec. 3, 1898.

Theories in Regard to Uremia.—It is generally admitted that uremia is an autointoxication from abnormal proteic substances developing in the organism under the influence of urinary poisons. Hugues and Carter ligated the renal artery in dogs and found that the blood from these dogs injected into healthy animals produced a fatal uremia, the same as the blood from an uremic subject. They conclude that there is some albuminoid substance in the blood of uremic subjects which produces alterations in the kidneys. Nephritis, therefore, as well as uremia, is the consequence of this poison. Semmola asserts that "Bright's disease may be denominated a hetero-albuminemia and should be classed with the general and dyscrasic diseases." A recent study of the subject by Ughetti in *Il Morgagni* for September, accepts these conclusions with a few reservations. They force him to admit the existence of uremia connected with alterations in other organs besides the kidneys: affections of the liver and of the thyroid gland may give rise to the same syndrome.—*Presse Méd.*, Dec. 24, 1898.

Minnesota Medical Legislation.—A new medical practice act, by which it is claimed all persons will be allowed to practice medicine after passing an examination before the State Medical Board has been introduced in the House by Mr. Fulton (Rep). of Ramsey, Minn. The bill is said to have been drafted by the State Medical Society and provides for a board of twelve medical examiners, to include members of all medical schools. The bill is intended as a substitute for the osteopathy bill.

Two Cases of Congo Lethargy.—Two cases of African "sleeping-sickness" are now in the Seaman's Hospital, London, both being Congo natives—a man of 22 and a boy of 11 years. Both began to be drowsy in May last, falling asleep over their work, and even over their meals, and the lethargy has gradually deepened until they now sleep all day long, but can be awakened to swallow food. The man can be roused to answer questions but the boy is almost unconscious. This remarkable disease has a latent period of from three to seven years after infection, and a chronic course of from six to fifteen months, but is invariably fatal. It will depopulate whole villages, ploughing through the population at the rate of 15 to 20 per cent. per annum, until half are dead and the remainder fleeing in terror. No case has ever originated outside of a certain zone upon the west coast of Africa, but in the days of the slave trade negroes would sicken and die of it years after they had been brought to the West Indies.—*Medical News*, Dec. 24, 1898.

Michigan State Board of Health.—At a regular meeting of this Board, the following preamble and resolutions were unanimously adopted:

WHEREAS, It is eminently desirable that reliable vital statistics shall be collected by the next United States Census, and

WHEREAS, The system to be followed should be in accord with the most progressive methods observed in several of the States, the Michigan State Board of Health, at its regular meeting held at Lansing, January 13, 1899,

Resolved, That the Representatives and Senators from Michigan be requested to lend their assistance in securing such correct vital statistics in non-registration States as may be possible:

Resolved, Furthermore, that the appointment of Dr. Cressy D. Wilbur, the present efficient Chief of the Michigan Vital Statistics, be urged as Chief Vital Statistician of the next United States Census.

FRANK WELLS, President.
[Attest.] HENRY B. BAKER, Secretary.
Lansing, Mich., Jan. 20, 1899.

Medico-Military Legislation.—Under the editorial title of "A Fatal Defect," the *Army and Navy Register* of Feb. 4, 1899, discusses the want of liberality to the medical department in the provisions of the Hull bill, which has been passed by the House of Representatives and is now under consideration by the Senate Military Committee. It says: The army reorganization bill, as it goes to the Senate, is defective in no greater degree than in the provisions relating to the army medical department. We are sure that the measure will be amended in the Senate so as to place that corps on an efficient basis, but it is vitally important to officers of the army—those of other corps and of the line—that they unite in impressing on the Senate the necessity of putting the medical department on a proper footing. The relation of the surgeon to the officer makes the incident a personal matter, and with the greater demands for medical attendance among troops which are to be stationed in tropic climates, it is imperative that the medical corps be equipped in personnel as in material, so as to meet these new and grave conditions. While the House has authorized an army of 50,000, which may be expanded indefinitely up to 100,000, less than half the increase which Surgeon General Sternberg had said in his last annual report was absolutely necessary for an army of 60,000 was given to the medical de-

partment. The strength of the medical corps, even with its small increase as authorized by the House, is scarcely adequate for an army of 40,000.

Etiology of Rabies.—Memmo of Rome described some time ago a blastomycete that he had found in cases of rabies, pathogenic, and, as he believed, the specific cause of the disease. He now, in the *Centralbl. für Bakteriologie*, adds that he has detected it in the blood of four dogs dying of natural rabies, and in rabbits and pigeons inoculated with the virus. In all it was present in the brain and cord, the cerebrospinal fluid, the saliva, the parenchyma of the parotid, and in the aqueous humor. But he had not found it in the blood of the heart, nor in any other disease. It grows best in fluid media, especially in broth containing glucose made faintly acid with tartaric acid. The cultures begin to grow after about a week, but not freely, being easily inhibited by air infection, e. g., the dust of the laboratory. Cultures of the third or fourth generation, purified from any traces of the original matter by repeated plate-culture, were injected into rabbits and guinea-pigs. Symptoms of paralysis of the hind legs appeared in the rabbits after eleven to twenty days, and in dogs after thirty to sixty. In all, the disease ended fatally in a few days, and in dogs the phenomena were those of typic rabies. He believes that Foll, Rivolta, Ferran and Spinelli have seen it too, and he is able to confirm Sanfélice's demonstration of its presence by staining in the spinal cord of a boy who died of hydrophobia.—*Public Health*, London, November, 1898.

Direct Bronchoscopy.—According to the *British Medical Journal*, Killian has succeeded in examining the bronchi either directly by a mirror or by tracheoscopy. By the former method only the commencement of the bronchi, and especially the right, can be seen. By Kirstein's method the author has been able to see more than by the mirror, and even in children, whom it is impossible to laryngoscope, good results have been thus obtained. A little more of the main bronchi can be seen by turning the patient's head to one side. Tracheoscopy can be carried out by the tube used for esophagoscopy. These tubes may be passed into the main bronchi. In tracheoscopy through a tracheotomy wound the mirror is not of much value. A considerable improvement is effected by attaching Casper's electroscope to the tubes. The importance of obtaining a view into the bronchi is obvious in the cases of foreign bodies. The author says that under cocain anesthesia it becomes possible to introduce stiff tubes into the chief bronchi, and so to change the position as to obtain a view of the lumen of the main bronchi, and even of their branches. It is a matter of indifference to the patient whether the tube stops at the bifurcation or is pushed farther on, provided the cocainization is sufficient. The well-oiled and warm tube speculum is introduced through the tracheal wound, the head hanging backward and inclined to one side. The illumination is obtained from Kirstein's frontal lamp or Casper's electric lamp. The tube is pushed on carefully under this inspection. The author gives examples showing the possibility of this procedure. A similar result may be obtained by passing the tubes through the mouth. The pharynx and larynx must be cocainized by a 20 per cent. solution. The mandrin may be required at a certain stage in the manipulation. No unfavorable effect on the breathing was noted. In bronchial catarrh there may be greater irritability, but coughing brings no harm with it. Direct superior bronchoscopy must be limited to patients who can be examined by autoscopy, and who are not too ill or anxious. Perhaps narcosis may assist. Inferior bronchoscopy is always possible. The advantages obtained by suitable position apply to bronchoscopy as well as to laryngeal autoscopy.

Examination of Blood in Filariasis.—The blood of patients suffering from chyluria, lymphangitis, lymph-scrotum, or elephantiasis, may contain a peculiar parasite—the *filaria sanguinis hominis*. It is a nematode worm, of which the female may be from three to three and one-half inches long, the male being much smaller. The female, during the life of its host, discharges an immense number of embryos into the circulation, and it is these which are found in the blood. They are filiform, about one nintieth inch long, and in a drop of fresh blood exhibit extremely active movements. The adults remain in the lymphatics. It is a remarkable fact that the filaria is only to be found in the peripheral circulation during the night, or more strictly, during the hours devoted to rest and sleep, and it is therefore necessary to observe special precautions as to time if it be desired to demonstrate their presence. I find that good preparations can be obtained by proceeding as follows: 1. Prepare several blood-films, taking care in this instance to have the films rather thick. Allow them to dry in the air, and then pass them about ten times through a flame. 2. Next get rid of the hemoglobin by washing the films well under a tap with water. 3. Stain for three minutes with a 0.5 per cent. watery solution of eosin, wash, and dry. 4. Transfer to a saturated watery solution of methylene blue for three minutes. Wash well with water, dry, and mount in balsam. The parasites will be stained blue, and the corpuscles pink. The detection of micro organisms, when present in the blood, is a task of no small difficulty, and one which can only be accomplished with certainty by a trained bacteriologist. As, however, it will not always be possible for the bacteriologist to meet the clinician at the bedside, I think it will be useful to point out the special conditions under which bacteria may actually be found in the blood. And first it must be remembered that normal blood is perfectly sterile. It has been fully demonstrated that the liquor sanguinis possesses powerful bactericidal properties which would under normal conditions tend to destroy any bacteria that might happen to reach the circulation by the ordinary channels. The cellular elements, the leucocytes, have also the power of attacking and destroying any foreign solid particles that may get into the circulation. The usual plan of defense is that the leucocytes, aided, perhaps, by cells from the spleen and other organs, seize upon and engulf the microbes, which they then proceed to digest at leisure; so that before a pathogenic organism can gain a permanent foothold in the blood it has to resist first, the bactericidal action of the plasma, and secondly, the phagocytic action of the cellular elements. Practically, the best chance that it has of overcoming all these resistances is for it to become anchored in some corner removed from the direct blood stream, where it can in a measure become accustomed to its new environment.—*Treatment.*

Restoration of Ulna by Femur of a Rabbit.—Before the Clinical Society of London, Mr. Arbuthnot Lane has presented two cases illustrative of the above named operation. One was a child, the subject of a congenital abnormality of the shaft of the ulna. She had suffered from a progressive incapacity and deformity of the forearm and hand since birth. It hung in a position of considerable flexion and abduction when she attempted to use it, which she did very imperfectly indeed. The ulna consisted of two separate parts, whose pointed extremities overlapped and whose axes varied considerably in direction. The lower end of the ulna was situated considerably above that of the radius. He exposed both fragments freely and separated them from the surrounding parts. Extension was made on the lower fragment till the hand assumed its normal position. The femur of a rabbit was split longitudinally, and its halves were wired securely to the fragments so as to bring their longitudinal axes into their normal relationship to another, and to retain the lower fragment on a level with the lower end of the radius. The result of this operation was most satisfactory, both as regarded the removal of deformity and the restoration of the normal functions to the part. The second was that of a man, aged 19 years, who lost the shaft of the ulna in 1896. He was admitted into Guy's Hospital in September, 1898, when the radiograph showed that there extended from either extremity of the ulna a fine spicule of bone. An incision was made along the length of the ulna, and these spicules being exposed and freed from the soft parts in which they were embedded, a femur of a very large rabbit was then wired securely to the ends of the ulna, the spicules

being included in the loops of wire. The result as shown by the skiagraph was most satisfactory, and Mr. Lane hoped at a later date to render the usefulness of the arm more complete by removing some of the new bone that had been thrown out about the extremities of the ulna in consequence of the original inflammation.—*Scalpel*, December, 1898.

Substandard Lives in Relation to Life Insurance.—An editorial in the *Medical News*, Dec. 17, 1898, touches upon a subject that has often puzzled medical men, namely, the insurance of so called "damaged lives." There are every year applying to us many persons whose health is in some way impaired and who would not under ordinary circumstances be accepted as risks by life insurance companies. This discussion of the subject, therefore, is cordially welcomed, because it comes quasi officially and is an index of present tendencies in life insurance circles. Medical men have long felt that among those rejected by insurance companies there are a number of people who constitute good risks and whose expectancy of life is not below the average: people with tubercular family histories, yet healthy themselves, or with the personal history of some phthisic manifestations years ago, but now in good health. Not a few of them are affected with a slight heart lesion, often with only a heart murmur—it is sometimes forgotten that the terms are not identic in meaning—but with never a symptom of disturbed compensation, or with an albuminuria without casts, or some of the other or clearly significant manifestations for which insurance companies deem it wise to reject applicants. Most medical men, too, have been of the opinion that the present system was unfair in certain ways. Actuary statistics of the expectancy of life of the whole population are, we believe, used to determine premium rates, while policies are issued only on the select lives that have no defects, and whose expectancy of life, therefore, at any given age is considerably greater than the average. It has been said that the present profits of the life insurance business and its ability to pay magnificent salaries are due to this fact. We are glad to think that this opprobium, if it has any real basis in fact, is about to be removed. From a purely medical standpoint we welcome the heralded innovation for two reasons: The consciousness of a provision for their families will be a remarkable steadying therapeutic agent for certain nervous patients whose neurotic symptoms, manifested in functional heart murmur or cyclic albuminuria, have in the past led to their rejection by insurance companies, to the no small detriment of their state of mind and health.

Antiseptic Uses of Oxygenated Waters.—At the December meeting of the Paris Academy of Medicine several surgeons gave their experience in the use of oxygenated water in surgery. M. Lucas Championnière said that during the space of one year he had made clinical trial of this agent and had found that oxygenated water was an antiseptic of remarkable power, and of special value in cases of suppuration of septic infection. Solutions of ten or twelve parts by volume seemed to act best and were very superior to solutions of perchlorid of mercury. A solution of oxygen is not only capable of checking putrefaction but will also prevent its occurrence. In vaginal hysterectomy a preliminary douching of the canal with this solution gives better results than any other antiseptic fluid. In cases of septic infection after abortion, washing out the uterus with oxygenated water is just as satisfactory a method of treatment as curettage. In addition to the properties already mentioned, oxygenated water is a hemostatic. On the other side, M. Charpentier argued that the liquid would not keep, and moreover was an admirable culture-medium for streptococcus. M. Ferrand also spoke against it, saying the peroxid of hydrogen was not only an irritant but actually a caustic. M. Monod said that in his opinion nothing was better than a carbolic spray, and M. Labbé agreed with him. M. Laborde spoke in his turn in defense of the oxygen solution, saying that it was absolutely harmless and could be used as an intravenous injection. In reply, M. Championnière, while allowing that the solution in question was very unstable, argued that it could be obtained from the manufacturers in a state of great purity, and was certainly far superior to phenol.—London *Lancet*, Dec. 17, 1898.

Mobility of Tumors.—An interesting article by Pagenstecher entitled "Studies on the Mobility of Abdominal Tumors," appears in the *Deutsche Zeitsch. f. Chir.*, Bd. l, s. 64. He endeavors to present, as he says, some more general rules for the examination of the mobility of movable abdominal tumors than have heretofore existed. By the term "tumor" he means any mass which can be palpated within the abdominal cavity, including movable organs. In his list of tumors which may be movable he mentions tumors of the stomach, carcinomata, myomata, cysts; tumors of the intestine, small and large; carcinomata, intestinal cysts, invagination, foreign bodies, fecal impaction, empyema of the appendix vermiformis; cysts and solid tumors of the ovaries; tumors of the uterus; movable liver; Riedel's tongue-shaped masses, enlargements of the gall-bladder, echinococcus cysts and other movable new growths of the liver; movable kidneys; movable spleen; tumors, solid and cystic, of the mesentery and omentum. The simple fact of mobility alone permits no conclusion as to the nature or point of origin of a tumor. One must know the degree and kind of mobility. Pagenstecher starts out with the simple mathematic proposition that from the arc described by a body moving about a central point, the radius and central point may be found. He then says, if one found a movable abdominal tumor which, when moved throughout its extreme range of motion, describes an arc of a circle, one may expect that such a tumor has a pedicle and that such pedicle corresponds to the radius of the given arc with its fixed point at the center thereof. From one's knowledge of the anatomic relations of the abdominal organs, one may thus form conclusions as to the point of fixation or point of origin of the tumor and thus of its nature. So much then for the theoretic part of his article. He then considers the difficulties of application: The fact that the abdomen is a cavity, not a plane, hence the necessity of marking out and studying the line of motion as traced on the surface; the deflection and interruptions of motion as produced by irregularities of the abdominal walls and the organs contained therein, etc. He then considers what may constitute the pedicle of movable tumors, as for instance, blood-vessels, peritoneal folds, stretched-out ligaments, bands of adhesions, the mesentery, Fallopian tube, etc. The separate tumors are then considered more in detail, numerous drawings illustrating their range of motion as determined clinically as well as experimentally on the cadaver. He closes with the statement that further clinical observations are necessary to determine the degree of practicability of his scheme, but he is certain that more careful study of the range and degree of mobility of this class of tumors will furnish information of considerable diagnostic value.

Army Hospital-Corps School of Instruction.—The examination and graduation exercises of the School of Instruction of the Reserve Hospital, Second Army Corps, at Camp MacKenzie, Augusta, Ga., took place January 30 and 31. The examination was held on the first day and comprised: 1, inspection of camps; 2, infantry and cavalry squad drill; 3, ambulance and litter drill; 4, examination in anatomy, physiology and first aid, by acting Asst.-Surgeon Molyneaux Turner; 5, examination in osteology, materia medica and pharmacy, by Acting Asst. Surgeon Victor C. Roberts; 6, examination in nursing, by Acting Asst.-Surgeon C. L. Baker, and 7, examination in nursing of fevers and camp sanitation by Acting Asst. Surgeon Elbert E. Parsons. The graduation exercises were held on the following

afternoon, in the Y. M. C. A. Hall. Lieut.-Col. A. C. Girard, chief surgeon, under whose supervision the school was instituted by Major Edgar N. Mearns, surgeon U. S. A., delivered the address, in which he reviewed the history of the hospital corps and gave many illustrations of the difficulties encountered in organizing a hospital corps for the Second Army Corps in its first encampment at Alger, near Falls Church, Va. The diplomas were delivered to the members of the class by Major-Gen. S. S. Sumner, U. S. V., commanding the Second Army Corps. There were forty five graduates.

To Prevent Premature Burials.—Among the bills introduced before the New York State Legislature is one that deals with the matter of premature burials, concerning which the public are unduly alarmed. Distant communities, it must be confessed, are the greatest sufferers from the evil. The projector of the bill says, unequivocally, that its object is "to preclude all danger of burying a live person. We have a number of authenticated cases of this," he continues, "and had such an act as we propose been in existence, they would not have occurred." Much time and a degree of gruesomeness is turned on the details of the safeguards. For instance: "In cities or places where there are 100 or more interments, it is required that each cemetery shall have a mortuary or mortuaries to be used for the disposal of the dead, which shall provide rooms of sufficient number to enable every body that is received to be placed and kept therein a certain time." Further, for it is impossible to be explicit without liberally quoting: "The mortuary is to be constructed of stone, brick, or metal throughout, as far as practicable. Each room in the mortuary must be at least ten feet in length by six feet in width, and ten feet in height, with a door at least six and one-half feet high and four feet wide. Over the door there is to be a transom kept open at all hours. The doors must be kept unlocked at all times, and permission to inspect the body deposited shall be given at all hours of the day to the relatives or friends of the deceased, provided that the officers may refuse to permit more than fifteen persons in one day to inspect the body. There is to be in each of the rooms a window at least two feet wide and three feet high, opening into the outer air." The bill also requires that no body shall be buried, cremated, or otherwise disposed of in any of the cemeteries, crematories, or other places for the final disposal of the dead before twelve hours shall have elapsed from the time of death, as stated in the certificate of the attending physician or coroner, and before unequivocal signs of decomposition shall have appeared. The signs, and they are good enough in their way, are: Permanent cessation of respiration and circulation; purple discoloration of the dependent parts of the body; appearance of blistering around a part of the skin touched with a red-hot iron; the characteristic stiffness known as rigor mortis; and signs of decomposition. In last year's bill, which was much discussed, but not disposed of because of an adjournment of the Legislature, these signs of death were: that incisions into arteries produced no flow of blood; that no transparent appearance existed in the hands and fingers when they were held close to a light; that a mucous covering of the eyes had been found, and that no moisture appeared upon a mirror held within half an inch of the lips and nostrils. The most commendable feature of the bill in question is the nonexposure of a body in the case of epidemic diseases. "But," says the *New York Commercial Advertiser*, "it does not appear to be necessary to fix an absolute time during which any body should remain unburied. A very much shorter period than seventy-two hours would suffice even in so called doubtful cases for rigor mortis to declare itself. The latter change actually takes place from three to five hours after death, and signals the commencement of decomposition. After this nothing can be gained by waiting, watching or testing." The airing of this question by the public press of the Empire State has accentuated the fact that a German law is the model of the proposed enactment, and that there exists the London "Society for the Prevention of Premature Burial." Yet again in March last, in a pretentious hotel in New York City, there was held over the subject a symposium of lawyers, doctors, coroners and undertakers, none of whom suggested an autopsy as a final settlement. Such a recourse would certainly have been more effectual than an adjournment in confusion.

Trained Female Nurses for the Army.—Under date of Jan. 24, 1899, Surgeon-General Sternberg addressed a letter to the Secretary of War, in which he says that our experience during the war with Spain has demonstrated the fact that the services of trained female nurses in the care of serious cases of typhoid fever and other diseases requiring skilful nursing are indispensable. He therefore recommends the enactment by Congress of a law embodying the following provisions:

That the Surgeon-General of the Army is hereby authorized to make contracts with female nurses, not exceeding in number 1 per cent. of the Army of the United States; and as many female chief nurses as, in his judgment, the service may require. Nurses shall be paid at a rate not to exceed $50 per month, and chief nurses at a rate not to exceed $75 per month. Each nurse and chief nurse shall receive one ration in kind or commutation therefor, and be provided with quarters and medical attendance, and when necessary may be granted such leaves of absence, with pay, as the Surgeon-General of the Army may authorize. Such nurses and chief nurses shall be graduates of training schools for nurses, provided that when employed to nurse yellow fever cases or to perform duties as dietists or matrons they may be exempted from this provision.

There has, however, been introduced into the United States Senate a bill which places the proposed corps of nurses under the control of an extraordinary commission.

The first section provides that women nurses in the proportion of not less than .5 per cent. of the number of men in the Army shall be employed in military hospitals, and shall constitute the woman's nursing service of the Army. The second section provides for a commission, to be known as the Nursing Service Commission, to be composed of the Secretary of War, the General Commanding the Army, the Adjutant General and the Surgeon-General, ex-officio, and three women appointed by the President, two of whom shall be nurses, graduates of a general hospital training-school giving a course of instruction lasting not less than two years; and that this Commission shall, subject to the provisions of this Act, have general charge of the nursing service. The other sections go into the details of the service. There shall be a superintendent, who shall be a graduate from a training school and who shall be appointed by the President for a term of seven years, and confirmed by the Senate, from candidates nominated by the commission. Besides this superintendent, there shall be an assistant superintendent, chiefs of nurses, all graduates, etc., and shall present credentials and pass an examination to the satisfaction of the Commission and give three months probationary service in an Army preparatory school. Any nurse may be suspended by the chief of nurses or by the surgeon in charge of the hospital, through the chief of nurses, for incompetency or misconduct, and may be discharged by the Surgeon-General and the superintendent of nurses. All further rules and regulations regarding admission to and conduct of the nursing service shall be formulated by the superintendent of nurses, subject to the approval of the Commission. The salary of the women members of the Commission is to be $6 a day each when in actual service; the superintendent of nurses $3000 per annum, with suitable office facilities and necessary clerks for the transaction of business; the assistant superintendent $2000 per annum; the chief nurses $85 per month; the head nurses $50; the assistant nurses $40 and the probationers $30 per month, all with transportation and necessary traveling expenses when on public business, and all, except the superintendent and the assistant superintendent, with subsistence, uniforms and laundry, and medical attendance, nursing and medicines during illness.

These singular propositions in the way of legislation are embodied in S. 5353 and H. R. 11770, 55th Congress, 3d Session.

Cincinnati.

DR. LOUIS SCHWAB.—Dr. Louis Schwab, president of the Cincinnati Academy of Medicine, and coroner-elect of Hamilton County, began active duty February 1. His predecessor, Dr. Jacob Haerr, will devote himself to his private practice.

DR. ARCH. I. CARSON.—Dr. Arch. I. Carson has been appointed to fill the place of Dr. James M. French, who has been promoted to succeed the late Police Surgeon Armstrong. Dr. Carson is a graduate of the University of Cincinnati, of the Miami Medical College, ex-interne of the Cincinnati Hospital, demonstrator of pathology in Miami Medical College, pathologist to the Cincinnati Hospital, and secretary to the Cincinnati Natural History Society.

SMALLPOX.—Smallpox, which has been stamped out in the

country districts of Ohio, is reported to be on the increase in Cincinnati and Cleveland. This is ascribed by Dr. Byron Stanton, local member of the State Board of Health, to the number of tenement houses, insufficient ventilation, and the neglect of sanitary precautions by a large class of the population. A circular letter has been issued by the Health Department, urging on the public the vital importance of vaccination of all persons who have never been vaccinated, and the revaccination of all persons who have not been successfully vaccinated within the last five years. The forty-six cases now at the branch are all doing well; as yet there has been no death in the city, showing that the disease is exhibiting a very mild form.

Louisville.

LIEUT. BEN. FRANK.—Dr. Ben. Frank, formerly hospital steward with the First Kentucky Volunteer Regiment, and later acting assistant-surgeon, on duty in Porto Rico, returned on the transport *Berlin* January 27. He will remain for a time in Louisville on leave.

Dr. DUNCAN EVE of Nashville president, and Dr. HENRY E. TULEY, secretary, of the Mississippi Valley Medical Association, spent a day in Chicago with Dr. H. N. Moyer, chairman of the Committee of Arrangements, relative to the coming meeting of the Association in Chicago, September 12. Much interest has already been manifested in the session, which promises to be a very large one.

KENTUCKY UNIVERSITY.—A very complete operating room and amphitheater has just been completed by the Medical Department of Kentucky University, in their building, corner of First and Chestnut Streets. The laboratories, which were delayed in opening on account of the delay in receiving the microscopes, have been opened with large classes.

SMALLPOX.—A large number of cases of smallpox have been confined to the pest-house during the past month. There is no likelihood that the disease will be long in evidence. Much satisfaction has been had in the new glycerinated vaccin lymph. The consensus of opinion is that it gives a much better result, less often having serious suppuration of the site of inoculation.

Dr. J. M. MATHEWS will shortly go to Kansas City as the guest of a local medical society, before whom he is to make an address.

PHARMACY.—An important meeting of the State Board of Pharmacy was held at the Louisville Hotel on January 10 and 11. The question of the appointment of inspectors for the State, whose duty it is to see that the laws regulating the practice of pharmacy in the State are observed, was considered and finally adopted. Some of the more frequent violations are the employment of unlicensed men to care for drug stores in the absence of the proprietor or clerk; the selling of medicine, drugs and insecticides by others than druggists, such as department stores, etc. The Board is now in position to enforce these laws, a large unexpended part of the appropriation being devoted to this purpose. About seventeen candidates for license to practice pharmacy in the State were examined during this session of the Board.

KENNEDY.—Dr. Orville Kennedy, who for the past eight years has been professor of chemistry in Central University, Richmond, Ky., has removed from that place and located at Crescent Hill, Ky., a suburb of Louisville, where he will practice his profession. Crescent Hill is his old home, he having moved to Richmond from there.

IN A QUANDARY.—A peculiar condition of affairs existed at the county jail last week, when a negro named Blanks, under sentence to hang February 24, for criminal assault on a young white girl at Mayfield, Ky., developed smallpox. The jailer communicated with the governor by wire, who replied that Judge Barker of the criminal division, had jurisdiction; Judge Barker refused to assume it, but the jailer, urged on by the jail physician, Dr. Garvin, sent him to the Eruptive Hospital under a special guard. He will wear both leg-irons and handcuffs. The mayor of Frankfort, where the State penitentiary is located, through the governor, ordered no more prisoners brought to the penitentiary until the jail was in good condition. Some nineteen or twenty cases have developed at the county jail and all were removed to the pest-house.

VACCINATION.—The common council has passed the compulsory vaccination ordinance, which also makes it mandatory for cases of smallpox to go to the pest-house. Heretofore if the patient or family refused, he could not be forcibly removed to the eruptive hospital. In accordance with this ordinance the following physicians have been appointed to vaccinate the unprotected throughout the city. First ward, C. E. Embry; second ward, C. G. Lucas; third ward, O. O. Kennedy; fourth ward, Clifton Miles; fifth ward, Donald Jacobs; sixth ward, Thomas Dunlap; seventh ward, A. H. Falconer; eighth ward, H. H. Lewis; ninth ward, Louis Blitz; tenth ward, Johuk Freeman; eleventh ward, the city physicians, Drs. Guest and Palmer.

X RAY.—An X-ray photograph of a fractured arm is being used as evidence in a damage suit at Henderson, Ky., in which a physician is sued for $10,000 damages for malpractice—the first time in the history of the court at that place.

LEXINGTON.—The city council of Lexington has been in a deadlock for some weeks over the annual apportionment ordinance. It was broken at the meeting of February 1 by its passage. It gives St. Joseph's Hospital and the Good Samaritan Hospital each $3,000 annually, for the care of the destitute sick, as the city has no city hospital for the care of these cases.

ASYLUM REPORT.—The annual report of the Eastern Lunatic Asylum, Lexington, Ky., for the year ending Sept. 30, 1898, has just been published. The report of the superintendent, Dr. E. M. Wiley, is admirably prepared. The following are some extracts from the report of the Board of Directors: "The treatment, or rather the disposition, of the insane has in all ages proved a source of embarrassment. There still exists among men a sentiment in the closing years of the nineteenth century that a lunatic asylum is to be regarded simply as a place of custody or refuge to those members of society affected with mental disease. But a sentiment more creditable to our common humanity generally prevails, and it is now the better opinion of the world, that such institutions should be regarded as hospitals where suitable medical treatment can be had. The buildings fairly illustrate a century of evolution in the architecture of such erections for the custody and treatment of the insane. The first buildings were erected in 1816, and others have been added at various intervals, until the entire structure has assumed an impressive appearance. The first building erected still retains the narrow, dark cells, wherein the insane, in the early part of the century, were confined. The heavy doors to these cells still bear evidence of the small aperture through which the food was delivered from the outside to the chained maniac." The report of the Board deals largely with the manner of the choice of the medical superintendent and his assistants. At present they are appointed by the Governor, and the Board recommends that the appointment be entirely removed from politics, when the evils of changing so often are so evident, especially as there are more than eight hundred inmates affected by this change. The report of the superintendent shows the advantage of the system of parole and the addition of a little work; the nature of the $30,000 worth of improvements and the planting of 400 fruit trees on the asylum grounds. It is urged in this report that the name of the institution be changed from "asylum" to "hospital," as has been done in so many States. Statistical tables show that there were 246 persons admitted during the year, making the total number of inmates 861; acute melancholia was the affection from which most of the newly admitted ones suffered; the largest number admitted range in age from 25 to 30 years; most of them are married; housekeepers and farmers predominate in the occupation of those admitted; Fayette County sends more patients than any other county; 806 of the patients are Americans, 21 Irish and 21 Germans. The medical staff is composed as follows: Superintendent, Dr. E. M. Wiley; assistant physicians, Porter Prather, C. D. Mansfield and Louise S. Bergmann.

Philadelphia.

RESIGNED.—After many years of service as pathologist and curator of the Pennsylvania Hospital, Dr. Henry M. Fisher has resigned.

APPOINTMENT CONFIRMED.—Dr. Joseph S. Neff's appointment by Mayor Warwick, as a member of the Board of Charities and Corrections, has been confirmed by the Select Council.

NEW LABORATORY DIRECTOR.—Dr. Henry W. Cattell, senior coroner's physician of this city, has been elected by the Board of Managers of the Pennsylvania Hospital as director of the Ayer Clinical Laboratory, now in course of construction on the grounds of that institution.

SERVED AS SUBSTITUTE.—Owing to the recent illness of Dr. Horatio C. Wood, Sr., who is confined to his bed with an attack of la grippe, the clinical lectures on therapeutics and materia medica at the University of Pennsylvania have been given by Dr. Horatio Wood, Jr.

PRACTICING FRAUD ON THE DOCTORS.—A man in this city has been arrested and held in the sum of $600 bail for having obtained money from several physicians under false pretenses.

METHODIST HOSPITAL.—The term of service of Drs. James Hendrie Lloyd and J. P. Crozer Griffith having expired, they will be succeeded by Drs. W. C. Hollopeter and Thompson S. Westcott as visiting physicians. Drs. John B. Roberts and Robert Le Conte will succeed Drs. Edward Holmes and Joseph P. Tunis, as visiting surgeons, while Drs. Richard C. Norris and George Arety Shoemaker will exchange service.

HOWARD HOSPITAL.—In the surgical department, Dr. Edward Martin succeeds Dr. Charles H. Frazier.

ST. JOSEPH'S HOSPITAL.—In the medical department, Dr. George Morley Marshall succeeds Dr. Henry Morris as visiting physician for ensuing term.

JANUARY WORK AT HOSPITALS.—Owing to the recent epidemic of grip, a large number of patients were treated by the different institutions of this city as follows: The German Hospital admitted during the month, 327; discharged 248; and 31 died; in the dispensary there were treated 3001 cases, of which 638 were new patients and 250 were accident cases. In the Women's Medical the number of patients treated in the clinics were: Surgical 147; medical 159; gynecologic 210. At St. Agnes, the patients admitted numbered 166; discharged 125; treated in dispensary 2070.

BEQUESTS TO PRESBYTERIAN HOSPITAL.—Through the death of Jane McCutcheon, a bequest of $200 has been left the Presbyterian Hospital of this city. Mr. J. Penrick Hogg, a member of the board of trustees of the hospital, is now having plans made for the erection of a handsome building for use as a home for nurses. The building will be three stories in height, with a basement, the dimensions of which will be 52 by 123 feet. The material will be composed of hard red brick, trimmed with brown stone and will be of sufficient size to accommodate seventy-six nurses.

INSANE AT BLOCKLEY HOSPITAL.—There are now 1400 insane patients in Blockley Hospital, originally intended for something over half that number. It is said that the increase in the insane department is something startling, and for the past ten years there has been an increase of 85 per cent. No single year has shown a decrease, there being, for instance, 760, Jan. 1, 1889, and 1378 on Jan. 1, 1899. At the present time 1400 are being cared for in that institution. As has been mentioned elsewhere, the State insane asylums are overcrowded and these institutions are clamoring for increased appropriations.

LECTURES ON MEDICINE.—The arrangement made by the trustees of the University of Pennsylvania, leaving vacant the chair of Practice of Medicine, recently filled by the late Dr. Pepper, and providing that the lectures be given by several members of the faculty, seems to give general satisfaction. The work has been assigned to Drs. Musser, Stengel, Fussell and Packard, in such a way that each lecturer might give instruction in those branches of special interest to them, and in this way the student will be the gainer thereby.

PTOMAIN POISONING.—On January 30 the students of Pennsylvania Military College, Chester, Pa., after a turkey dinner, were seized with nausea and vomiting so intense as to resemble arsenic poisoning. The fowls had been shipped (in the undressed state) from Delaware, and had been kept in cold storage until the time they were cooked, several days subsequently. At this time no offensive odor was detected. Out of 127 students at the college 67 were affected. No fatal results have so far been reported. A fatal case of ptomain poisoning occurred in this city during the past week. The patient, a coal dealer, had eaten a breakfast composed largely of scrapple, and at 10:30 began to suffer intensely from nausea and vomiting, accompanied by chilly sensations. Physicians' services were of no avail.

WILL FIGHT COMPULSORY VACCINATION ACT.—A citizen of Philadelphia, who it is said is in the habit of frequently figuring before the public as a general censor of morals, etc., is announced as proposing to fight the compulsory vaccination law which applies to school children. While he says he is not opposed to vaccination per se, he considers it an infringement on the rights and liberties guaranteed by the State constitution.

STATE CHARITIES FOR INSANE.—The Board of Commissioners of Public Charities of Pennsylvania has filed its report and applications for the several institutions have been made as follows: State Hospital for Insane at Harrisburg, $258,000; State Hospital for Insane at Norristown, $101,000; State Hospital for Insane at Danville, $49,670; State Hospital for Insane at Warren, $3000; State Asylum for Chronic Insane at Wernersville, $44,008.57. In addition to the above named sum, the Board recommends the establishment of a State institution for the treatment of epileptics, to cost $150,000, and also one for the convict insane, to cost $25,000.

MORTALITY STATISTICS.—During the week just closed, a total of 518 deaths have occurred. Of this number, 128 were children under the age of five years. The results go to show a slight falling off in the number of cases of typhoid fever and also a decreased numbe r of deaths. La grippe is gradually subsiding.

TYPHOID FEVER.—After some delay the Board of Health are taking active steps against typhoid fever. While in Boston only nine cases of typhoid fever existed, and in New York for the same period, there were only sixteen, in Philadelphia there were 427 cases.

GRIPPE THE CAUSE OF INSANITY.—During the past week the question of grippe as an etiologic factor in the production of insanity has been presented to different physicians of this city by a reporter, and the statement was made that all authorities agreed that this disease was a frequent cause of mental derangement. Dr. Daniel E. Hughes, chief resident physician at the Philadelphia Hospital, and who has 1400 insane under treatment, has been quoted as follows: "We were practically free for many years of the grippe until the winter of 1889-90. It has been observed from that time that melancholia and general depression of spirits with mental confusion was one of the most frequent sequels following an attack of grippe, coming in epidemic or endemic form. The mental confusion arose usually after the greater portion of the attack had passed away. Many patients taken into the insane departments of the Philadelphia Hospital, when their history is traced up, are found to have suffered from grippe within three or four months. We have in the wards today twenty typic cases of post-grippal confusional insanity, all coming to us earlier in their convalescence than formerly, and the type of the cases we are getting now is one of depression or melancholia. There is generally no trace of insanity in their families." At least one interesting example of the confusional form of insanity has occurred in this city within the past few days, when a young man about 30 years of age mysteriously disappeared from home. He first suffered from grippe last year, and had a recurrence about Jan. 1, 1899. On January 17 he left home, and until a few days ago was unable to give any account of himself. He finally landed in Washington and registered at one of the hotels in that city, giving the wrong name. A few days later employes of the hotel heard groans coming from his room, and on investigation, found that the young man had taken morphin. He was promptly removed to a hospital, where relief

was obtained. He lay in a dazed state for several days and could tell nothing of his wanderings since leaving home. He was kept under observation, and it is said consciousness was suddenly restored by showing him a photograph of his baby boy. Another mysterious disappearance has recently occurred in the person of a young lady who had also suffered from an attack of grippe, but up to this time all efforts to discover her whereabouts have been of no avail.

THE PUBLIC SERVICE.

Movements of Army Medical Officers under orders from the Adjutant-General's Office to February 2, 1899.

Lieut. George W. Acker, asst.-surgeon, 2nd Mass. Infantry, honorably discharged.

Major Aaron H. Appel, surgeon, U.S.A., to Fort Clark, Tex., from duty at Fort Hamilton, N.Y.

Major Henry P. Birmingham, brigade surgeon, Vols., order of Jan. 23, 1899 (discharge from Volunteer service), revoked.

Lieut. Thomas S. Bratton, asst.-surgeon, U. S. A., leave of absence extended.

Lieut. John W. Cox, asst.-surgeon, 6th U.S.V. Inf., sick leave extended.

Major Orlando Ducker, brigade surgeon, Vols., to proceed to Havana, reporting for the commanding general of the Division.

John F. Dunnigan, acting asst.-surgeon, from New Orleans, La., via Tampa, Fla., to the Department of Santiago, Cuba.

Allen P. Ebbert, acting asst.-surgeon, from Camp Forse, Huntsville, Ala., to the Department of Puerto Principe, Cuba.

Henry P. de Forest, acting asst.-surgeon, now on sick leave, to proceed to New York City and report to Brigade Surgeon N. S. Jarvis for instructions.

Ernest W. Fowler, acting asst.-surgeon, to Savannah, Ga., to the hospital ship *Bay State*, from duty at the General Hospital, Fort McPherson, Georgia.

Harry L. Gilchrist, acting asst.-surgeon, from duty at Albany, Ga., to the hospital ship *Relief* for transportation to Manila and duty in the Department of the Pacific.

Major James D. Glennan, brigade surgeon, Vols., orders of Jan. 23, 1899, to duty at Fort Myer, Va., revoked; to duty, instead, at Matanzas, Cuba.

Col. Charles R. Greenleaf, assistant surgeon-general, U.S.A., to Savannah, Ga., thence on the steamer *Bay State* to Cienfuegos, Cuba, stopping at such intermediate ports as may be designated by the Surgeon-General, for the purpose of inspecting the Medical Department at these stations, thence to such other places as may be indicated.

Lieut. Harry S. Greenleaf, asst.-surgeon, U. S. A., from duty at the Josiah Simpson General Hospital, Fort Monroe, Va., to Washington Barracks, D. C.

Herbert I. Harris, acting asst.-surgeon, from duty at Walker, Leech Lake, Minn., to Madison Barracks, N.Y.

Lieut. Charles E. Morrow, asst.-surgeon, U. S. A., from the hospital ship *Bay State* at Savannah, Ga., to Avila, via Havana and Jucaro, Cuba, to duty with the 15th U. S. Infantry.

Frank R. Maura, acting asst.-surgeon, sick leave extended.

Lieut.-Col. Louis M. Maus, chief surgeon, Vols., from duty with the 7th Army Corps to Fort Hamilton, N.Y.

Capt. Geo. W. Roberts, asst.-surgeon, 3d Tenn. Inf., honorably discharged on muster out of regiment.

Major Henry D. Thomason, chief surgeon, Vols., from temporary duty at Fort Clark, Tex., to his home to await orders.

Major William B. Wina, brigade surgeon, Vols., from duty at Anniston, Ala., to Havana, Cuba, reporting to the commanding general.

Robert H. Zauner, acting asst.-surgeon, from the general hospital, Fort Myer, Va., to duty in the Department of Puerto Principe, Cuba.

Chief Surgeons in the Military Division of Cuba.—Recent orders from the Headquarters of the Army announce the staff officers on duty in the Island of Cuba. From them we find Lieut.-Col. R. M. O'Reilly, U.S.V., chief surgeon, Division of Cuba, Major-Gen. John R. Brooke, U.S.A., commanding; Lieut.-Col. Timothy E. Wilcox, U. S. V., chief surgeon, Department of Mantanzas, Major-Gen. James H. Wilson, U.S.V., commanding; Lieut.-Col. Louis M. Maus, U. S. V., chief surgeon, Department of the Province of Havana, Major-Gen. Fitzhugh Lee, U. S. V., commanding; Major James H. Hyssell, U. S. V., chief surgeon, Department of Santa Clara, Major-Gen. John C. Bates, U. S. V., commanding; Major William C. Gorgas, U. S. A., chief surgeon, Department of Havana, Major-Gen. William Ludlow, U. S. V., commanding; Major Valery Havard, surgeon U.S.A., chief surgeon, Department of Santiago, Major-Gen. Leonard Wood, U.S.V., commanding; Major Samuel T. Armstrong, brigade surgeon, U. S. V., chief surgeon, Department of Puerto Principe, Brig.-Gen. Louis H. Carpenter, U. S. V., commanding; and Major William L. Kneedler, brigade surgeon, U. S. V., chief surgeon, Department of Pinar del Rio, Brig.-Gen. George W. Davis, U. S. V., commanding.

Movements of Navy Medical Officers.—Changes in the medical corps of the U.S. Navy for the week ending Feb. 4, 1899.

P. A. Surgeon E. S. Bogert, Jr., ordered to additional duty in attendance on officers of the Navy and Marine Corps, at New York.

P. A. Surgeon C. F. Stokes, ordered to duty as member of the board of medical examiners, New York, February 1.

Asst.-Surgeon G. L. Angeny, order detaching from the naval hospital, Chelsea, Mass., and ordered to the "Indiana," revoked.

Medical Director E. S. Bogert, retired, detached from special duty at New York and ordered home.

Medical Director D. Bloodgood, retired, detached from special duty at New York and ordered home.

Surgeon T. C. Craig, retired, detached from duty as a member of the board of medical examiners, New York, February 1, and ordered home.

Surgeon L. B. Baldwin, detached from the naval recruiting rendezvous, New York, and ordered home to await orders.

Asst.-Surgeon E. G. Parker, ordered to the "Pensacola."

Asst.-Surgeon W. H. Garton, order of January 14, detaching from the "Supply" and ordering to the Washington navy yard, revoked.

Surgeon G. E. H. Harmon, detached from the "Newark" and ordered to the "Amphitrite."

Surgeon A. C. H. Russell, detached from the bureau of medicine and surgery and ordered to the "Newark," February 8.

Asst.-Surgeon J. J. Snyder, detached from the "Wabash" and ordered to temporary duty at the naval hospital, Newport, R. I.

CHANGE OF ADDRESS.

Crump, J. M., from Fairfax to 1111 South 9th Street, Tacoma, Wash.
Chapman, W. S., from Ft. Monroe, Va. to Rouse, Colo.
Collins, T. S., from Ryan to Burchinal, Ia.
Dean, W. W., from Chicago to Stromburg, Neb.
Edwards, F. H., from Rockford to 1562 Maple Ave., Evanston, Ill.
Folkland, M., from Mt. Pleasant, Ia. to Aberdeen, S. D.
Heflebower, R. C., from Groton to Berkshire Bldg, Cincinnati, O.
Hendley, F. W., from 785 E. McMillan to 2528 Chatham Street, Cincinnati, O.
Hulen, Y. H., from New York City to 406 Sutler Street to San Francisco, Cal.
Hulett, C. M. T., from Kirksville, Mo. to The Hollenden, Cleveland, O.
Korn, A., from Chicago to 1219 Madison Ave., New York City.
Law, H. B., from Boston, Mass. to 100 Washington St., Hartford, Conn.
Lisle, H. C., from Springfield, O. to Genoa Junct., Wis.
Moore, H. C., from Beeville to Halletsville, Texas.
Mathews, C. O., from Terell to 307 W. Main, Denison, Texas.
Olesen, from Chicago to 61 Howland Street, Battle Creek, Mich.
Outlen, W. B., from Equitable Bldg to 3515 Pine Street, St. Louis, Mo.
Pampel, B. L., from Omaha, Neb. to Livingston, Mont.
Perkins, P. M., from New York Life to Altman Bldg, Kansas City, Mo.
Reedy, E. S., from Colorado City, Colo. to Joliet, Ill.
Stevens, F. W., from Chicago to Bloomington, Ill.
Werner, O. E., from Rib Lake to Brillion, Wis.
Wright, J., from Roseburg, Ore. to Clinton, Ill.

LETTERS RECEIVED.

Abbott, F. W., Taunton, Mass.; Anderson, Winslow, San Francisco, Cal.; Abels, H. J., Liverpool, O.; American Traveler, Chicago; Ambrose O. A., St. Louis, Mo.; Ammonol Chemical Co., New York City; Allen & Hanbury's Ltd. London, Eng.; Adams, J. F., Bagdad, Ky.

Bartlett, R. H., Chicago; Brockhausen, B. Erp, Lansing, Ia.; Brock, Chas., Fort Wayne, Ind.; Bassett, H. S., Philadelphia, Pa.; Bernheim, A., Philadelphia, Pa.; Bradner, F. C., New York City; Ball, Austin, Charleston, S. C.; Babcock, L. C., Philadelphia, Pa.; Barbour, J. M., London, Eng.; Biedler, H. R., Baltimore, Md.; Blumer, G. Alder, New York City; Blakiston's Son & Co., Philadelphia, Pa.; Bergman, Geo. W., Portland, Ind.; Bush, J. H., Chicago.

Chapman, N. S., Rouse, Colo.; Cannady, C. G., Roanoke, Va.; Case, F. D., Ashtabula, O.; Caton, C. W., Coshocton, O.; Collins, T. L., Burchinal, Ia.; Collins, E., Ryan, Ia.; Chicago Medical Book Co., Chicago; Clark, L. E., Elk Park, N. C.; Clark, L. P., Sonyea, N. Y.; Chicago Oxygen Gas Co., Chicago; Couch, E. E., Milwaukee, Wis.

David, E. L., Louisville, Ky.; Durham, C. E., Galveston, Texas.

Emrich, E. L., Cleveland, O.; Elliott, H. G. (2), New York City; Egan, J. A., Springfield, Ill.; Etna Chemical Co., New York City; Evans, M. H., Spring Valley, Ill.

Frazer, W. A., Lyle, Minn.; Traveler's Adv. Agency, C. H., Chicago.

Grafe, F. A., Cincinnati, O.; Good, C. A., Traverse City, Mich.; Gorin, J. P., New York City.

Happel, T. J., Trenton, Tenn.; Harman, G. G., Huntingdon, Pa.; Harrison, C. F., Perry, Ill.; House, L. F., Sinking Spring, O.; House, G. V. Mfg. Co., New York City; Hinchman, J. V., Hebron, Neb.; Hunt, B. S., Winchester, Ind.; Holloway, Jas. M. Louisville, Ky.; Hutchings, Guy, Eustis, Fla.; Hektoen, L., Chicago; Hagan, A. W., Buffalo, N. Y.; Hotz, F. C, Chicago; Herman, A. L., Minneapolis, Minn.; Hulen, Y. H., San Francisco, Cal.; Hulett, C. M. T., Kirksville, Mo.; Hendley, T. W., Cincinnati, O.; Haldenstein, J., New York City; Hummel Adv. Agency, A. L. (2), New York City.

Ill, E. J., Newark, N. J.

Jewelers's Review, New York City; James, J. A. J., St. Louis, Mo.; Jeffrey, J., Chicago; Jonas, A. F., Omaha, Neb.; Jicinsky, J. Rudis, Cedar Rapids, Iowa.

Kerr, I. J., Cleveland, O.; Kidd, J. W., Joliet, Ill.; Klussman, F. M., Toledo, O.; Keister, B. C., South Boston, Va.; Kenney, A. C., Astoria, Ore.; Kempson & Co., J. F., New York City; Kress, J. Owen Co., New York City.

Laudick, L. F., Lima, O.; Lambert Pharmacal Co. (2), St. Louis, Mo.; Larkins, E. L., Terre Haute, Ind.; Lentz, Amos, Larchwood, Ia.; Leland, G. A., Boston, Mass.; Long, M. B., Plainfield, N. J.; Lockhart, C. H., Witt, Ill.; Lisle, H. C., Genoa Junct., Wis.; Lund, T. B., Boston, Mass.; Lyen, J. B., Salvisa, Ky.

Magruder, G. L., Washington, D. C.; Malsbary, Geo., Cincinnati, O.; Mogk, W. A., Ann Arbor, Mich.; Merrick, M. B., Passaic, N. J.; Mitchell, T. B., Columbus, Ga.; Merrifield, O. G. & Co., Chicago; Murdock, E. P., Chicago; Moore, H. C., Beeville, Texas; Miser, Mrs. M. J., Lovilia, Ia.; Montgomery, L. H., Chicago; Miller, E. L. Detroit, Mich.; Meyen, C. & Co., New York City; Maltine Co., Brooklyn, N. Y.; McBurney, Ed., Jackson Center, O.; McClintock, J. T., Iowa City, Ia.; McSwain, I. A., Paris, Tenn.

N. Y. Post Grad. Med. School, New York City; Northrop, K., Wernersville, Pa.

Oakman Motor Vehicle Co., Greenfield, Mass.

Packard, F. A., Philadelphia, Pa.; Pollock, W. L., Boone, Ia.; Pampel, B. L., Omaha, Neb.; Purdue, P. F., Swinton, Mo.; Plummer, C. G., Salt Lake City, Utah; Plummer, H. E., Des Moines, Ia.

Raymond, J. H., Brooklyn, N. Y.; Rasco, L., Madisonville, Tex.; Reedy, E. S., Joliet, Ill.; Rectanus, F., Louisville, Ky.; Remalin, R. H., Cincinnati, Ohio; Reed, G. D., Topeka, Kans.; Reed & Carnrick, New York City; Ritchie, Parks, Minneapolis, Minn.; Roberts, W. H., Terre Haute, Ind.; Ross, J. W., Clarksville Tenn.; Russell, E. D., Clare, Iowa.

Sargent, Geo. S., San Francisco, Cal.; Saunders, W. B., (2) Philadelphia, Pa.; Scott, N. Stone, Cleveland, Ohio; Stewart, J. W., The Book Bindery, York, Pa.; Simplex Lamp Co., Brooklyn, N. Y.; Stevens, F. W., Bloomington, Ill.; Sinclair, J. G., Chicago, Ill.; Smith, J. F., Baltimore, Md.; Solly, S. E., Colorado Springs, Colo.; Street, David, Baltimore, Md.; Steenmetz, T. W., New York City; Sherman, J. S., Cassopolis, Mich.; Squibb, E. H., Brooklyn, N. Y.; Stuver, E., Fort Collins, Colo.; Smith, C. H., Lebanon, Ind.; Spearman, W. C., Texarkana, Tex.

Taylor, J. L., Wheelersburg, Ohio; Terry, C. E., Denver, Colo.; Thompson, M. E. B., Cincinnati, Ohio; Trovillion, E. B., Gold Hill, Colo.; Trueheart, P. P., Sterling, Kans.; Treat, E. B. & Co., New York City; Transylvania Printing Co., Lexington, Ky.; Trow Directory Printing and Book Binding Co., New York City; Tuttle, H. H., (2) Springfield, Ill.

Ward, W. K., Washington, D. C.; Wells, G. R., Livingston, Mont.; Weymann, M. F., St. Joseph, Mo.; Wherry, J. W., Chicago, Ill.; Widmer, W. A., Philadelphia, Pa.; Wigginton, J. N., Waukesha, Wis.; Woldert, E. A. (2) Philadelphia, Pa.; Watts, G. W., Chicago, Ill.; Walter, A. F., Gladbrook, Iowa; Wood, H. F., Chicago, Ill.